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ECONOMIC PROFILE

1606

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IN UTAH

UNITED STATES
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ECONOMIC PROFILE

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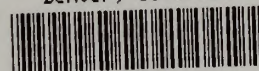
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TABLE OF CONTENTS

	<u>Page</u>
I. <u>PURPOSE AND USE OF UTAH'S BLM ECONOMIC PROFILE</u>	1
A. Description of Utah - Physical Features	2
1. Ownership and Administration of Utah Lands	4
B. Utah's Economic History	4
II. <u>UTAH'S ECONOMY IN DEPTH</u>	9
A. Population	9
1. General Facts	9
2. Age Distribution	13
3. Urban-Rural Population Shifts	13
4. Population Projections	13
B. Income	18
1. Personal Income	18
2. Family Income	18
3. Income Projection to 1980	25
C. Employment	25
1. Non-agricultural	25
2. Agricultural	28
D. Imports and Exports	28
E. Economic Impact of Government Programs in Utah	28
1. Investments and Receipts from BLM-administered Lands	28
2. BLM Payments to the State of Utah	34
3. HHFA 701 Grants	37
4. Major Government Projects in Utah	37

	<u>Page</u>
5. Economic Development Program	38
6. Past, Present and Future Public Lands Occupancy Demands	39
7. Reclamation Programs in Utah	42
8. Defense Programs in Utah	43
F. Basic Industries in Utah	43
1. Timber Production	44
2. Agriculture	44
3. Recreation and Tourism	53
4. Minerals	63
a. General	63
b. Recent Trends in Utah Production	68
c. National Importance of Utah Minerals	72
d. County Mineral Production	72
e. Production of Leasable Minerals from BLM-administered Lands in Utah	72
5. Transportation	79
a. General	79
b. Transportation Across Public Lands	79
III. <u>PRESENT AND FUTURE DEMAND FOR RESOURCES FROM BLM-ADMINISTERED LANDS IN UTAH</u>	88
A. Wood Products	88
1. Present Situation	88
2. Future Demands	88

	<u>Page</u>
B. Water	93
1. Present Situation - Statewide	93
2. Present Production - BLM	96
3. Future Water Demands - Statewide and BLM	99
4. Water Quality - Present Situation	99
a. Biological Pollution	99
b. Chemical Pollution	101
c. Physical Pollution	104
5. Future Quality Demands	104
C. Wildlife	105
1. Present Situation	105
2. Future Demands	105
D. Livestock Grazing	109
1. Present Situation	109
2. Future Demands	111
E. Recreation	111
1. Present Situation	111
2. Future Demands	111
3. Natural Beauty Needs	113
F. Minerals	113
IV. <u>A SUMMARY OF UTAH'S ECONOMY AND THE BLM ROLE</u>	116
A. Present Situation	116
B. Future Situation	117
<u>LITERATURE CITED</u>	120-123

TABLES

<u>No.</u>	<u>Title</u>	<u>Page</u>
1	Land Ownership by Major Classes, Utah	5
2	Lands Administered by BLM in Utah Counties	6
3	Population of the United States and the Eleven Western States Official Census, 1940-1960: Projections, 1970, 1980	10
4	Estimates of Total Resident Population in the Western States	11
5	Population of Utah by Counties	12
6	Percentage of Population of Utah Counties in Various Age Groups, April 1, 1960	14
7	Area and Population of Utah Counties, Urban and Rural, 1950 and 1960	15
8	Projected Population of Utah by County, 1965-2020	17
9	Percentages of Total Personal Income from Major Industrial Sources in Utah and the Nation, 1963	19
10	Personal Income in Utah by Source, 1963	20
11	Personal Income in Utah Counties 1958-1962	21
12	Per Capita Personal Income of Utah, Adjacent States, and United States, 1929-1963	22
13	Average Monthly Wage in Utah by County and Major Industry - 1964	23
14	Number of Families, Median Family Income and Percentage Distribution of Family Income, by County, Utah, 1959	24
15	Projected Personal Income for Utah 1964-1980	26
16	Employment and Jobs in Utah by Industry	27
17	Number of Nonagricultural Employees in Utah by County and by Major Industrial Classification - June, 1965	29
18	Agricultural Employment in Utah by Counties, 1950-1961, Annual Averages	30
19	Unemployment Data for Utah (1950-1964)	31

TABLES

<u>No.</u>	<u>Title</u>	<u>Page</u>
20	Investments Made in Utah's BLM-administered Lands for Development & Conservation of Range Resource	32
21	Cash Receipts from BLM-administered Lands and Resources in Utah	35
22	Payments to the State of Utah from Public Land Revenues	36
23	Net Acres Transferred from (-) or to (+) BLM Administration in Utah for Different Types of Withdrawals	40
24	Types and Amount of Land Transfers from Public Ownership	41
25	Area by Land Classes, Utah, 1961	45
26	Area of Commercial Forest Land by Ownership Classes, Utah, 1961	46
27	Net Annual Growth and Cut of Growing Stock on Commercial Forest Land, by Ownership Classes, and by Softwoods and Hardwoods, Utah, 1962	47
28	Net Annual Growth and Annual Cut of Sawtimber on Commercial Forest Land, by Ownership Classes and Softwoods and Hardwoods, Utah, 1962	48
29	Farms, Acreage, Land in Irrigated Farms and Value of Products by Source in Utah by County, 1964	50
30	Cash Farm Income in Utah from Livestock and Livestock Products, 1963	51
31	Beef Cattle and Sheep on Utah Farms and Those Grazing on BLM-administered Lands, 1940-1965	52
32	Projections of Licensed Resident Hunters and Fisherman in Utah, 1965-1975	57
33	Number of Nonresident Visitors to Utah, 1955-1962	58
34	Projected Nonresident Fishing and Hunting License Sales in Utah, 1965-1975	60
35	New Outdoor Recreation Activities Utah Residents Want to Begin	62
36	Factors Preventing Participating in New Outdoor Recreation Activities	64

TABLES

<u>No.</u>	<u>Title</u>	<u>Page</u>
37	Improvements which Might Result in Increased Participation in Outdoor Recreation by Persons Already Active in these Pursuits	65
38	Quantity and Value of Utah Mineral Production, 1963	66
39	Utah's Mineral Production, 1958-1963	69
40	Value of Mineral Products of Utah and the United States	70
41	Value of Mineral Production in Utah by Counties, 1951-62	71
42	Mineral Leases on Utah's Public Lands (Acres)	77
43	Production of Minerals from Utah's Public Lands	78
44	Number of Companies, Employment, and Wages Paid in Transportation Industries in Utah, 1963	80
45	Summary of State and Local Road Mileage in Utah as of December 31, 1964	86
46	Total Timber Cut from National Forests in Utah, 1911-1963	89
47	Production of Sawtimber from BLM-administered Lands by District, 1965	90
48	Products Harvested from Utah Forests - 1962	91
49	Wood Products Harvested from BLM-administered Lands, by District, 1965	92
50	State Water Budget	97
51	Estimated Present and Projected Water Diversion Requirements in Utah	100
52	Concentration and Discharge of Dissolved Solids and Suspended Sediment for Streams in the Upper Colorado River Basin, Utah	103
53	Big Game Use of Public Lands-1965; Estimated Big Game Populations in Utah	106
54	Wildlife Habitat Inventory - 1965	107
55	Areas of BLM Lands of Vital Importance to Wildlife in Utah, 1965	108

TABLES

<u>No.</u>	<u>Title</u>	<u>Page</u>
56	Portion of Utah Livestock Forage Produced from BLM-administered Lands - 1965	110
57	Summary of Outdoor Recreation Visitor Days on Utah's Public Land in 1965 - by Agency	112
58	Present and Projected Mineral Production for all lands in Utah and for BLM-administered Lands in Utah (1964 & 1980)	114
59	Summary of Forest Lands in Utah (1964 & 1980)	116
60	Summary of Grazing Lands in Utah (1964 & 1980)	118
61	Summary of Rangeland Lands in Utah (1964 & 1980)	120
62	Summary of Wetland Lands in Utah (1964 & 1980)	122
63	Summary of Wildlife Lands in Utah (1964 & 1980)	124
64	Summary of Wilderness Lands in Utah (1964 & 1980)	126
65	Summary of National Monument Lands in Utah (1964 & 1980)	128
66	Summary of National Historic Landmarks in Utah (1964 & 1980)	130
67	Summary of National Antiquities Act Lands in Utah (1964 & 1980)	132
68	Summary of National Conservation Lands in Utah (1964 & 1980)	134
69	Summary of National Recreation Lands in Utah (1964 & 1980)	136
70	Summary of National Scenic Area Lands in Utah (1964 & 1980)	138
71	Summary of National Wild and Scenic River Lands in Utah (1964 & 1980)	140
72	Summary of National Wild Horse and Burro Lands in Utah (1964 & 1980)	142
73	Summary of National Wetlands in Utah (1964 & 1980)	144
74	Summary of National Wildlife Refuge Lands in Utah (1964 & 1980)	146
75	Summary of National Wilderness Study Area Lands in Utah (1964 & 1980)	148
76	Summary of National Antiquities Act Lands in Utah (1964 & 1980)	150
77	Summary of National Conservation Lands in Utah (1964 & 1980)	152
78	Summary of National Recreation Lands in Utah (1964 & 1980)	154
79	Summary of National Scenic Area Lands in Utah (1964 & 1980)	156
80	Summary of National Wild and Scenic River Lands in Utah (1964 & 1980)	158
81	Summary of National Wild Horse and Burro Lands in Utah (1964 & 1980)	160
82	Summary of National Wetlands in Utah (1964 & 1980)	162
83	Summary of National Wildlife Refuge Lands in Utah (1964 & 1980)	164
84	Summary of National Wilderness Study Area Lands in Utah (1964 & 1980)	166
85	Summary of National Antiquities Act Lands in Utah (1964 & 1980)	168
86	Summary of National Conservation Lands in Utah (1964 & 1980)	170
87	Summary of National Recreation Lands in Utah (1964 & 1980)	172
88	Summary of National Scenic Area Lands in Utah (1964 & 1980)	174
89	Summary of National Wild and Scenic River Lands in Utah (1964 & 1980)	176
90	Summary of National Wild Horse and Burro Lands in Utah (1964 & 1980)	178
91	Summary of National Wetlands in Utah (1964 & 1980)	180
92	Summary of National Wildlife Refuge Lands in Utah (1964 & 1980)	182
93	Summary of National Wilderness Study Area Lands in Utah (1964 & 1980)	184
94	Summary of National Antiquities Act Lands in Utah (1964 & 1980)	186
95	Summary of National Conservation Lands in Utah (1964 & 1980)	188
96	Summary of National Recreation Lands in Utah (1964 & 1980)	190
97	Summary of National Scenic Area Lands in Utah (1964 & 1980)	192
98	Summary of National Wild and Scenic River Lands in Utah (1964 & 1980)	194
99	Summary of National Wild Horse and Burro Lands in Utah (1964 & 1980)	196
100	Summary of National Wetlands in Utah (1964 & 1980)	198

Portion of land reserved for public use in the State of New York - 1901	26
Summary of General Statistics of the State of New York - 1901	27
Land in 1901 - by agency	28
Forest and Wildlife (General) Statistics for all lands in the State of New York - 1901	29

ILLUSTRATIONS

<u>No.</u>	<u>Title</u>	<u>Page</u>
1	Location of Utah in the Western United States	3
2	State of Utah Generalized Land Status Map	7
3	Population Changes in Utah Counties	16
4	Sources and Amounts of Funds Invested to Improve Utah's BLM-administered Lands, 1934-1965	33
5	Metals of Utah	73
6	Non-Metallic Minerals of Utah	74
7	Solid Hydrocarbons of Utah	75
8	Oil and Gas Fields of Utah	76
9	Interstate Highway System for Utah	82
10	Federal Aid Interstate System	83
11	Airports and Major Air Routes in Utah	84
12	Railroads in Utah	85
13	Precipitation--Water Yield Relations for the State of Utah	95
14	Water Consumption by Areas, Utah	98
15	Dissolved-Solids Concentration	102

LIST OF CONTENTS

Page	Topic
1	Location of Utah in the Western United States
2	State of Utah Governmental Land Survey Map
3	Population Changes in Utah Counties
4	Soil and Water Resources of Utah Investigated for Irrigation (1934-1935)
5	Minerals of Utah
6	Non-Metallic Minerals of Utah
7	Soil Hydrology of Utah
8	Oil and Gas Fields of Utah
9	Interstate Highway System for Utah
10	Federal Aid Interstate System
11	Airports and Major Air Routes in Utah
12	Recreation in Utah
13	Recreation-Inter-County Yield Relations for the State of Utah
14	Water Consumption by County, Utah
15	Miscellaneous-Soil in Construction

I. PURPOSE AND USE OF UTAH'S BLM ECONOMIC PROFILE

This economic profile has been written for primary use by BLM personnel making program decisions involving Utah's public lands. These personnel include the Utah state director, district managers, area managers, and key staff men in the state and district offices. Washington office and service center program personnel, as well as other persons interested in BLM operations in Utah, may also find it useful.

The profile will:

1. Describe Utah's economic base and the economic climate within which BLM operates in Utah.
2. Relate Utah's economy to that of the other western states and to the national economy.
3. Describe and compare Utah's major industries and project their future growth.
4. Portray population growth trends in Utah, identifying areas in the state where growth will occur, and relating the impact of this growth to BLM programs.
5. Describe BLM's contribution to Utah industries.
6. Forecast future demand for goods and services from BLM-administered lands in Utah.

Most data shown and discussed in the profile has been gathered from non-BLM sources. Credit for outside material is given, as appropriate, throughout the text. Data pertaining only to BLM-administered lands and resources was gathered mainly from Utah's BLM district offices.

Data in this report will be listed by county--or BLM district where possible. This should make the report more useful since appropriate counties can be grouped together to form geographic units with similar economic impact. To illustrate, the impact of BLM's recreation programs near Flaming Gorge Reservoir could be gauged by combining the appropriate statistics from Daggett and Uintah Counties since they comprise the Utah areas within which Flaming Gorge has its highest influence. Many resources and land uses can be studied in a similar way by combining other data from other counties or districts. The profile does not provide basic cost-benefit evaluations nor does it measure economic efficiency of BLM programs. These kinds of studies will be done as needed for individual programs or projects.

THE HISTORY OF THE UNITED STATES

The history of the United States is a story of growth and change. It begins with the first settlers, who came to the Americas in search of a new life. They found a land of opportunity, but also one of conflict. The story of the United States is a story of the struggle for freedom and the pursuit of the American dream.

THE FOUNDING FATHERS

The Founding Fathers were the men who created the United States. They were men of vision and courage, who fought for the principles of liberty and justice for all.

The Founding Fathers were men of many different backgrounds and beliefs. They were men who had fought in the Revolutionary War, and who had seen the need for a new government.

The Founding Fathers were men who believed in the power of the people. They believed that the government should be created by the people, and for the people.

The Founding Fathers were men who were dedicated to the cause of freedom. They were men who were willing to sacrifice for the principles of liberty and justice for all.

The Founding Fathers were men who were men of action. They were men who were not afraid to stand up for their beliefs.

The Founding Fathers were men who were men of faith. They were men who believed in the power of God.

The Founding Fathers were men who were men of hope. They were men who believed that the future was bright.

The Founding Fathers were men who were men of courage. They were men who were not afraid to face the challenges of the future.

The Founding Fathers were men who were men of wisdom. They were men who had learned from the mistakes of the past.

The Founding Fathers were men who were men of integrity. They were men who were honest and truthful.

The Founding Fathers were men who were men of honor. They were men who were proud of their country and their heritage.

Seven broad assumptions about the future have been made in developing this economic study. They are listed below and are identical with those made by BLM technicians and administrators in developing long-range plans for the public lands.

1. There will not be a major war, with related economic impact similar to that experienced during World War II.
2. There will be a continuation of the "Cold War," with periodic eruptions such as Viet Nam, which will require maintenance of the present pattern of defense expenditures.
3. There will be no profound change in the existing socio-political order.
4. There will be no severe and widespread depressions.
5. While there will be no dramatic scientific technological change having a major impact on the public lands, technology in general will continue to improve and expand.
6. There will be a continuation of national population growth and a steady increase in individual prosperity.
7. There will be a continuing shift of population toward urban centers, with the development of "new towns" within reasonable commuting distance of urban centers.

A. Description of Utah--Physical Features

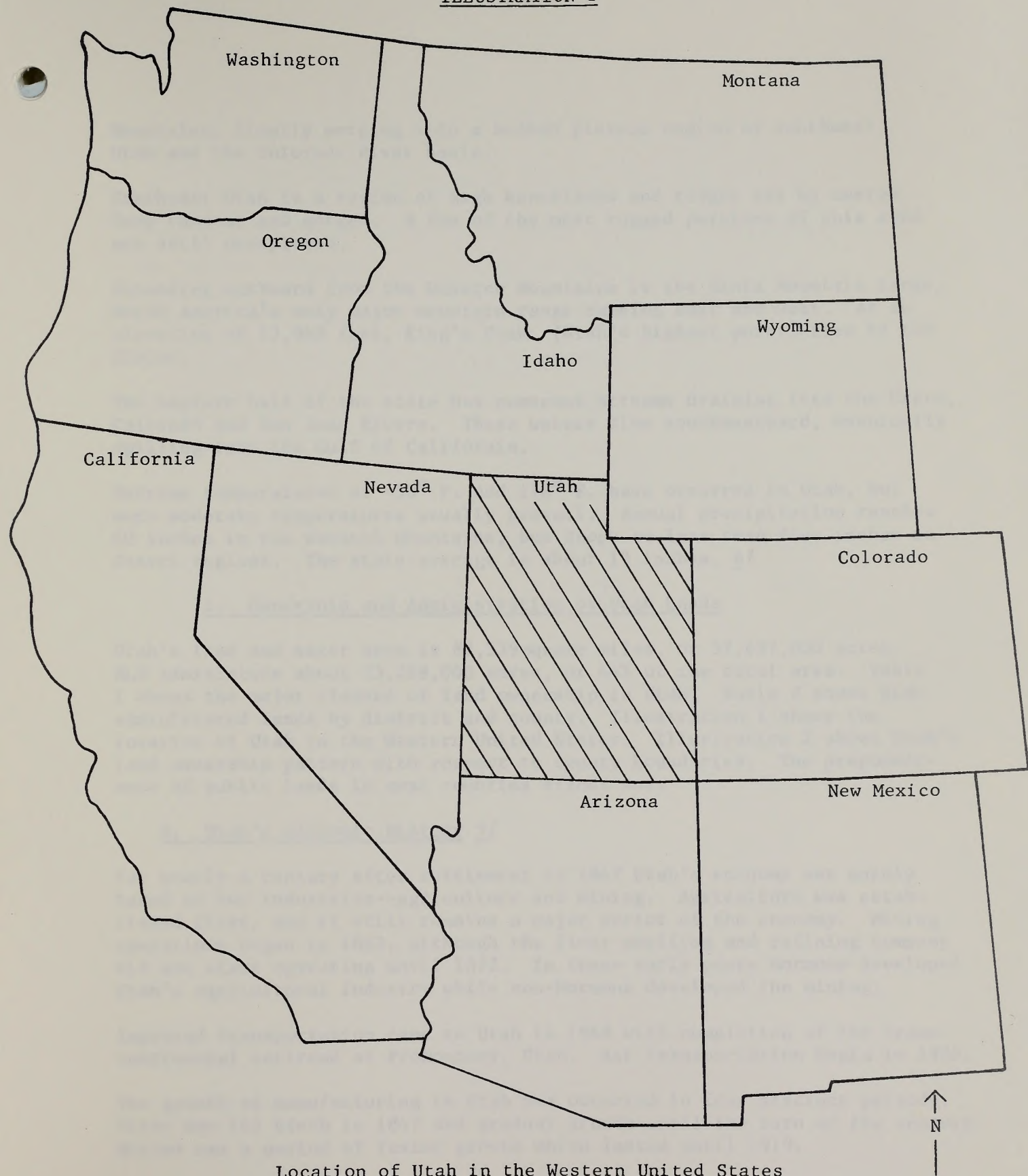
Midway between Canada and Mexico, Utah stands near the center of the 11 western states. (See Illustration 1) The 11th largest state, it includes about 79,000 square miles of land and 3,000 square miles of water surface.

Utah's western region lies in the Great Basin, North America's largest closed basin. Streams flowing within the Great Basin all have internal drainage--no outlet to the sea. Narrow isolated mountain ranges and desert basins typify western Utah.

The Great Salt Lake, about 50 by 75 miles in size, lies in northwestern Utah. This world-famous body of water, with a salt level of 25%, never freezes. Stretching south and west of this lake is the Great Salt Lake Desert.

Bounding the Great Basin on the east are the Wasatch Mountains. The high Sanpitch, Pahvant and Tushar Plateaus join the southern edge of the Wasatch

ILLUSTRATION 1



Location of Utah in the Western United States

Mountains, finally merging into a broken plateau region of southwest Utah and the Colorado River basin.

Southeast Utah is a region of high benchlands and ridges cut by narrow, deep canyons and gorges. A few of the most rugged portions of this area are still unexplored.

Extending eastward from the Wasatch Mountains is the Uinta Mountain range, North America's only major mountain range running east and west. At an elevation of 13,948 feet, King's Peak (Utah's highest point) lies in the Uintas.

The eastern half of the state has numerous streams draining into the Green, Colorado and San Juan Rivers. These waters flow southwestward, eventually spilling into the Gulf of California.

Extreme temperatures of -50° F. and 116° F. have occurred in Utah, but more moderate temperatures usually prevail. Annual precipitation reaches 60 inches in the Wasatch Mountains, but drops to less than five inches in desert regions. The state average is about 13 inches. 6/

1. Ownership and Administration of Utah Lands

Utah's land and water area is 82,339 square miles, or 52,697,000 acres. BLM administers about 23,268,000 acres, or 44% of the total area. Table 1 shows the major classes of land ownership in Utah. Table 2 shows BLM-administered lands by district and county. Illustration 1 shows the location of Utah in the Western United States. Illustration 2 shows Utah's land ownership pattern with respect to county boundaries. The preponderance of public lands in most counties stands out.

B. Utah's Economic History 5/

For nearly a century after settlement in 1847 Utah's economy was mainly based on two industries--agriculture and mining. Agriculture was established first, and it still remains a major sector of the economy. Mining operations began in 1863, although the first smelting and refining company did not start operating until 1872. In these early years Mormons developed Utah's agricultural industry while non-Mormons developed the mining.

Improved transportation came to Utah in 1869 with completion of the trans-continental railroad at Promontory, Utah. Air transportation began in 1925.

The growth of manufacturing in Utah has occurred in four distinct periods. First was its birth in 1847 and gradual growth until the turn of the century. Second was a period of faster growth which lasted until 1919.

TABLE 1

Land Ownership by Major Classes, Utah 7 & 8/

<u>Class of Ownership</u>	<u>Acres</u>	<u>Per cent of Total</u>
Bureau of Land Management	23,268,000	44
Bureau of Reclamation	1,863,000	4
U. S. Forest Service	7,916,000	15
Indian	2,116,000	4
Other Federal	1,831,000	4
State	3,378,000	6
Private	<u>12,325,000</u>	<u>23</u>
Total	52,697,000	100

TABLE 2

Lands Administered by BLM in Utah Counties

County	Salt Lake	Fillmore	Cedar City	Richfield	Monticello	Price	Vernal	Kanab	Outside Gr. Dist.	BLM Total	County Total	% BLM
Beaver		1,016,902	111,192							1,128,094	1,655,680	68
Box Elder	999,607								253,188	1,252,795	3,580,160	35
Cache	160									160	752,000	--
Carbon						422,758	110,117			422,758	943,360	45
Daggett										110,117	461,440	24
Davis									23	23	171,520	--
Duchesne						91,336	121,078			212,414	2,086,400	10
Emery				169,247		1,941,078				2,110,325	2,842,880	74
Garfield			31,045	681,576		81,307		838,706		1,632,634	3,338,880	49
Grand					1,429,733		24,568			1,454,301	2,362,880	62
Iron		73,067	894,462					658		968,187	2,112,000	46
Juab	850,705	592,212								1,442,917	2,183,680	66
Kane	78,116		12,302					1,659,760		1,672,062	2,627,200	55
Millard	2,175	2,898,653								2,976,769	4,254,720	70
Morgan										2,175	390,400	1
Piute				166,789						166,789	481,920	35
Rich	165,821									165,821	654,080	25
Salt Lake	7,846								160	8,006	488,960	2
San Juan					1,955,319					1,955,319	5,045,760	39
Sanpete		144,390								144,390	1,022,080	14
Sevier	34,349					22,114	3,780			228,680	1,236,480	18
Summitt	1,793									5,573	1,190,400	--
Tooele	1,478,353	8,335							461,729	1,948,417	4,423,040	44
Uintah					9,766	2,080	1,426,559			1,438,405	2,856,320	50
Utah	72,140	12,069				7,622				91,831	1,278,720	7
Wasatch	6,644									6,644	764,160	1
Washington			546,872					51,146		598,018	1,552,000	39
Wayne				680,984						1,124,026	1,592,960	71
Weber	600					443,042				600	351,360	--
TOTAL	3,663,960	4,779,977	1,595,873	1,870,813	3,394,818	3,011,337	1,686,102	2,550,270	715,100	23,268,250	52,696,960	44

* This total land area for the state will not equal the sum of county totals shown because county figures are approximate

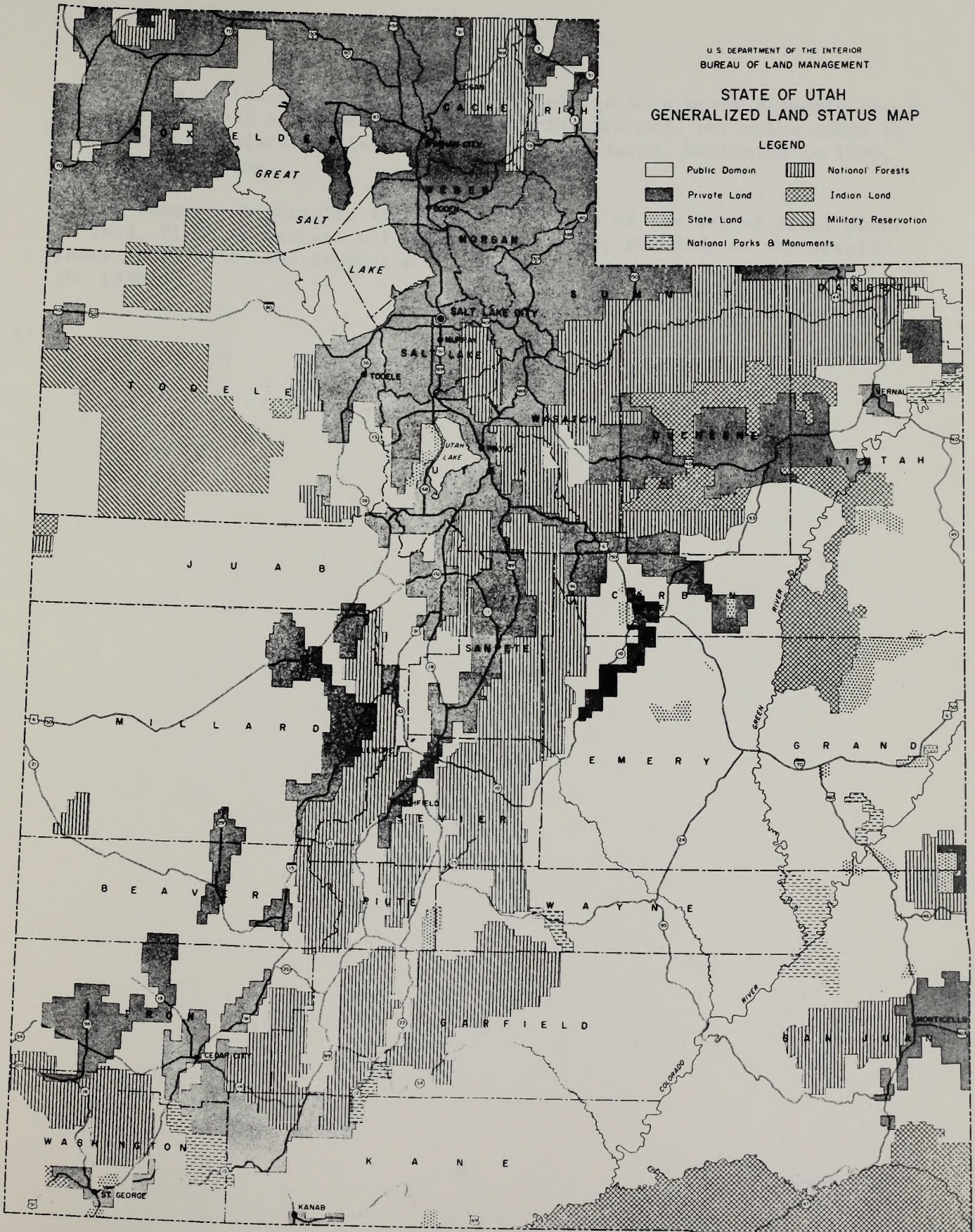
Statistics compiled from BLM records by the University of Utah ADP Data Bank

U.S. DEPARTMENT OF THE INTERIOR
BUREAU OF LAND MANAGEMENT

STATE OF UTAH
GENERALIZED LAND STATUS MAP

LEGEND

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During this period manufacturing began to emerge as a major economic force. From 1919 to 1939 employment in manufacturing dropped, but value added by manufacturing industries increased. The final surge, beginning in 1939, is still occurring.

Recent economic highlights include construction of the Geneva Steel plant in 1943, first commercial oil discovery in 1948, founding of the missile industry in 1955, and expansion of tourism and recreation beginning in the 1950's.

II. UTAH'S ECONOMY IN DEPTH

This section of the report will discuss the following component's of Utah's economy:

- A. Population
- B. Income
- C. Employment
- D. Imports and Exports
- E. Economic Impact of Government Programs
in Utah
- F. Basic Industries in Utah

A. Population

1. General Facts

On July 1, 1966 Utah's population was estimated at 1,008,000 by the U. S. Bureau of the Census. The Utah Population Work Committee estimated that Utah passed the million mark in 1964 and that the population of the state was 1,003,000 on January 1, 1965. 9/ In this economic profile, Bureau of the Census figures for past and projected populations will be used, except as noted.

Table 3 relates Utah's population to the nation and the other western states. These data show that Utah's population position in the western states (7th) is not expected to change by 1980, although it will expand about 57% in that period.

Utah has shown vigorous population growth in the 1960-1965 period. Its growth of 11.2%, while less than the mountain states average growth of 13.4%, is well ahead of the 8.1% U. S. average. These growth data and data for other western states are shown in Table 4. 20/

Population of Utah's counties is shown in Table 5. 9/ Note the uneven population distribution among the counties--this is a weighty factor when making certain types of long range plans. In 1965, 44% of Utah residents lived in Salt Lake County alone and 76% of the residents lived in only four counties, (Salt Lake, Davis, Weber and Utah) or slightly more than 4% of the state's land area. Note also that BLM administers relatively small amounts of land in these counties; from .01% in Davis County to 7.2% in Utah County. In less populous counties BLM administers up to 74% of the land area.

TABLE 3

Population of the United States and the Eleven Western States
Official Census, 1940-1960: Projections, 1970, 1980

States	1940	1950	1960	Official Census 18/ Projections		
				1970	1977	1980
Arizona	499,261	749,587	1,302,161	1,943,000		2,516,000
California	6,907,387	10,586,223	15,717,204	20,925		26,597,000
Colorado	1,123,296	1,325,089	1,753,947	2,199,000		2,380,000
Idaho	524,873	588,637	667,191	734,000		830,000
Montana	559,456	591,024	674,767	741,000		813,000
Nevada	110,247	160,083	285,278	491,000		509,000
New Mexico	531,818	681,187	951,023	1,138,000		1,454,000
Oregon	1,089,684	1,521,341	1,768,687	1,989,000		2,212,000
Utah	550,310	688,862	890,627	1,119,000		1,336,000
Washington	1,736,191	2,378,962	2,853,214	3,162,000		3,623
Wyoming	250,742	290,529	330,066	365,000		416,000
United States	13,883,305	19,561,524	26,777,165	34,806,000		42,686,000
	131,669,275	150,697,361	179,323,175	205,139,000		232,393,000
Western total	10.54%	12.98%	14.93%	17.00%		18.6%
U.S. total						
Utah total/Western States Total			3.33%	3.21%		3.13%
Utah total/U.S. Total			0.50%	0.55%		0.57%

TABLE 4

Estimates of Total Resident Population in the Western States ^{20/}

State	July 1, 1965 (Thousands)	1960 (Thousands)	Change 1960 to 1965	
			No. /	%
Nevada	440	285	154	54.2
Montana	706	675	31	4.6
Idaho	692	667	25	3.7
Wyoming	340	330	10	3.1
Colorado	1,969	1,754	215	12.2
New Mexico	1,029	951	78	8.2
Arizona	1,608	1,302	306	23.5
Utah	990	891	99	11.2
Mountain West	7,775	6,855	919	13.4
United States	193,818	179,323	14,495	8.1

TABLE 5

POPULATION OF UTAH BY COUNTIES

County	1930	1940	1950	1960	Jan. 1, 1965 Estimate*
Beaver	5,136	5,014	4,856	4,331	4,200
Box Elder	17,810	18,832	19,734	25,061	29,000
Cache	27,424	29,797	33,536	35,788	40,900
Carbon	17,798	18,459	24,901	21,135	18,000
Daggett	411	564	364	1,164	700
Davis	14,021	15,784	30,867	64,760	83,800
Duchesne	8,263	8,958	8,134	7,179	6,700
Emery	7,042	7,072	6,304	5,546	5,900
Garfield	4,642	5,253	4,151	3,577	3,200
Grand	1,813	2,070	1,903	6,345	7,600
Iron	7,227	8,331	9,642	10,795	10,800
Juab	8,605	7,392	5,981	4,597	4,700
Kane	2,235	2,561	2,299	2,667	2,600
Millard	9,945	9,613	9,387	7,866	7,500
Morgan	2,536	2,611	2,519	2,837	3,100
Piute	1,956	2,203	1,911	1,436	1,400
Rich	1,873	2,028	1,673	1,685	1,500
Salt Lake	194,102	211,623	274,895	383,035	445,000
San Juan	3,496	4,712	5,315	9,040	8,000
Sanpete	16,022	16,063	13,891	11,053	11,100
Sevier	11,199	12,112	12,072	10,565	10,000
Summit	9,527	8,714	6,745	5,673	6,000
Tooele	9,413	9,133	14,636	17,868	22,000
Uintah	9,035	9,898	10,300	11,582	12,700
Utah	49,021	57,382	81,912	106,991	117,700
Wasatch	5,636	5,754	5,574	5,308	5,400
Washington	7,420	9,269	9,836	10,271	10,500
Wayne	2,067	2,394	2,205	1,728	1,600
Weber	52,172	56,714	83,319	110,744	121,700
TOTAL	<u>507,847</u>	<u>550,310</u>	<u>688,862</u>	<u>890,627</u>	<u>1,003,000</u>

* Population estimates by counties for January 1, 1965, were prepared by the Utah Population Work Committee. The total of these estimates was approximately 13,000 (1.3%) higher than the provisional estimate of total state population in Utah for July 1, 1965, recently released by the U. S. Bureau of the Census.

SOURCE: Compiled by UTAH FOUNDATION from the U. S. Bureau of Census, and from the Utah Population Work Committee.

2. Age Distribution

The age class distribution of Utah's population is shown in Table 6. 1/ It shows that Utah has large numbers of young citizens--nearly 63% are less than 25 years old, 75% are less than 35 years old. County populations do not differ much in age class distributions, and the heavy proportion of young people holds generally true throughout the state.

Age class distribution of Utah's residents has relatively little relation to public land programs. Its major meaning is perhaps that Utah's large proportion of young citizens are interested in outdoor activities, and public lands are suitable for many kinds of recreation.

3. Urban-Rural Population Shifts

Utah's rural-urban population shifts among counties are shown in Table 7. 1/ Only one county (Carbon) shows a decrease in urban population in the 1950's. Sixty-five per cent of the counties show decreases in rural populations.

Illustration 3 shows graphically how Utah's population has changed in recent years. 21/ Although the overall population grew more than 10% from 1960 to 1965, the pattern of growth varied widely by county. San Juan County, for example, lost nearly 14% in this period, Daggett County lost more than 31%. Tooele, Box Elder, Davis and Grand Counties all gained more than 20%.

4. Population Projections

Population projections for the state and counties for 1980 and beyond (Table 8) show a fairly constant, continued increase. 22 & 23/ The urban living trend will continue. By 1975 only one rural county, Daggett, will grow at a rate faster than the state average. That county's growth will stem from the recreational opportunities associated with Flaming Gorge Reservoir.

Later in the century, populations of two other counties, Kane and Uintah, are expected to increase rapidly--Kane, due to development of a large steam-electric complex; and Uintah, because of the oil shale industry.

Three major factors influencing Utah's population growth are (1) natural increase through births and longer life, (2) migration to and from the state, and (3) economic changes.

Utah has had one of the nation's highest birth rates and lowest death rates for several years. In 1963 the state increase from births was 18,408 (1.85%), while the national increase was 1.24%.

TABLE 6

PERCENTAGE OF POPULATION OF UTAH COUNTIES IN VARIOUS AGE GROUPS
April 1, 1960

County	Under 5	5-14	15-24	25-34	35-44	45-54	55-64	75		Total
								65-74	and Over	
Beaver	12.1	24.0	12.4	10.2	12.8	11.2	9.0	5.9	2.4	100.0
Box Elder	15.3	24.4	14.7	13.5	10.9	8.6	6.2	4.2	2.2	100.0
Cache	13.4	20.5	21.6	11.5	9.0	8.6	6.9	5.4	3.1	100.0
Carbon	12.3	24.1	13.6	10.7	13.2	11.8	7.4	5.0	1.9	100.0
Daggett	14.7	22.6	14.8	13.8	14.3	11.9	5.2	1.9	.8	100.0
Davis	17.2	25.8	13.5	14.8	13.1	7.0	4.1	2.4	1.1	100.0
Duchesne	14.9	26.5	14.1	10.7	10.4	10.3	7.2	4.0	1.9	100.0
Emery	12.7	24.6	13.6	10.3	10.3	11.5	8.3	5.6	3.1	100.0
Garfield	12.9	25.1	14.3	10.5	11.3	10.9	8.1	4.9	2.0	100.0
Grand	17.5	21.4	15.7	16.1	12.2	9.0	4.8	2.3	1.0	100.0
Iron	13.1	24.6	16.7	12.3	11.4	9.1	6.8	4.0	2.0	100.0
Juab	11.4	23.6	13.0	8.8	10.8	12.1	9.2	7.3	3.8	100.0
Kane	14.7	23.8	14.1	11.2	11.3	10.8	7.4	4.3	2.4	100.0
Millard	12.5	26.8	12.2	9.1	10.8	10.6	8.9	5.9	3.2	100.0
Morgan	14.4	23.2	14.4	11.6	10.4	10.4	7.6	4.7	3.3	100.0
Platte	11.2	24.4	15.2	8.8	10.8	12.4	9.1	4.9	3.2	100.0
Rich	12.8	23.6	14.3	9.3	10.2	12.2	7.4	6.9	3.3	100.0
Salt Lake	14.1	22.5	14.7	13.1	12.1	9.5	6.9	4.6	2.5	100.0
San Juan	20.3	25.4	14.5	15.0	10.3	7.2	4.2	2.0	1.1	100.0
Snapete	10.0	22.4	14.0	7.9	10.0	12.4	9.9	8.4	5.0	100.0
Sevier	11.6	25.1	12.5	10.1	11.2	11.0	8.8	6.4	3.3	100.0
Summit	12.7	23.3	14.2	10.5	10.8	11.8	8.3	5.6	2.8	100.0
Tooele	14.5	24.1	15.7	13.2	12.6	8.8	6.1	3.4	1.6	100.0
Uintah	15.2	25.5	14.4	12.9	11.1	9.2	6.4	3.4	1.9	100.0
Utah	13.9	23.1	19.8	12.4	10.5	8.7	5.8	3.8	2.0	100.0
Wasatch	13.5	24.4	13.8	11.4	10.9	10.6	7.7	5.1	2.6	100.0
Washington	12.8	25.6	14.5	9.5	10.1	8.8	8.1	6.8	3.8	100.0
Wayne	11.6	26.7	13.5	8.7	12.5	11.6	7.9	5.3	2.2	100.0
Weber	13.8	23.8	14.0	12.2	12.7	9.8	6.8	4.7	2.2	100.0
State of Utah	14.2	23.4	15.3	12.7	11.8	9.3	6.6	4.4	2.3	100.0

Source: U.S. Bureau of the Census, Census of Population

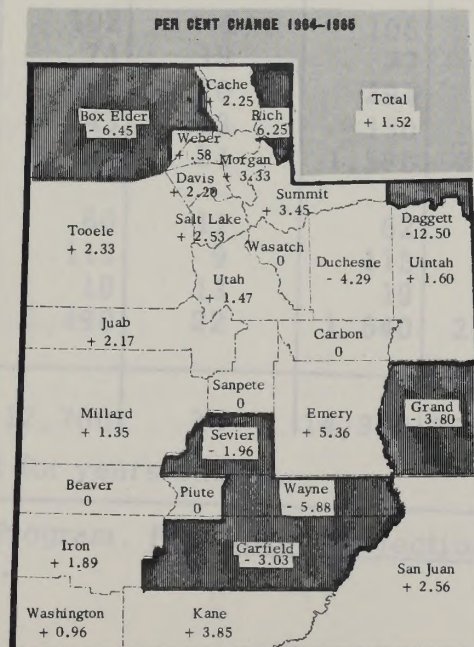
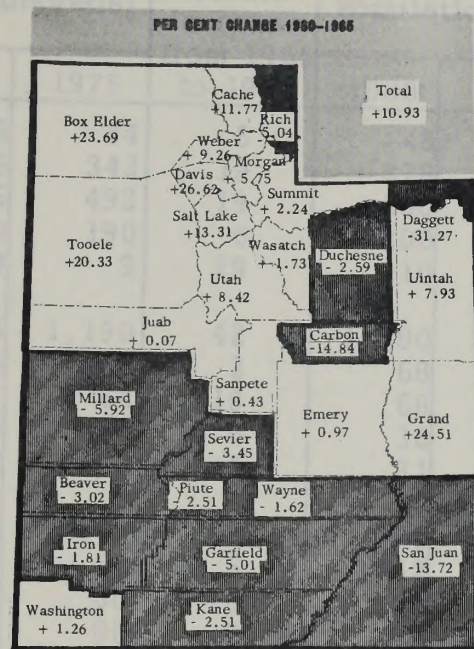
TABLE 7

AREA AND POPULATION OF UTAH COUNTIES, URBAN AND RURAL
1950 and 1960

County	1950 Population				Land Area				1960 Population				Per Cent Increase 1950 to 1960			
	Total		Urban		Total		Per Square Mile		Total		Urban		Total		Urban	
	Count	Area	Count	Area	Count	Area	Count	Area	Count	Area	Count	Area	Count	Area	Count	Area
The State	688,862	239,007	14,183	16,684	82,339	890,627	10.8	667,158	74.9	531,383	135,775	223,469	60,725	162,743	29.7	48.3
Beaver	4,856	4,856	---	---	2,587	4,331	1.7	---	---	---	---	4,331	3,019	1,312	---	---
Box Elder	19,734	12,944	6,790	8,134	5,594	25,061	4.5	11,728	46.8	---	11,728	13,333	3,234	10,099	72.7	3.0
Cache	33,536	16,704	16,832	6,304	1,175	35,788	30.5	21,243	59.4	---	21,243	14,545	5,359	9,186	26.2	12.9
Carbon	24,901	12,313	12,588	4,151	1,470	21,135	14.4	9,761	46.2	---	9,761	11,374	5,265	6,109	15.1	9.6
Daguerre	364	364	---	---	708	1,164	1.6	---	---	---	---	1,164	---	1,164	---	219.8
Davis	30,867	14,183	14,183	16,684	288	64,760	241.6	51,801	80.0	51,801	---	12,959	5,135	7,824	265.2	22.3
Duchesne	8,134	8,134	---	---	3,260	7,179	2.2	---	---	---	---	7,179	1,812	5,367	---	---
Emery	6,304	6,304	---	---	4,442	5,546	1.2	---	---	---	---	5,546	1,026	4,520	---	---
Garfield	4,151	4,151	---	---	5,217	3,577	0.7	---	---	---	---	3,577	1,435	2,142	---	---
Grand	1,903	1,903	---	---	3,692	6,345	1.7	4,682	73.8	---	4,682	1,663	49	1,614	---	---
Iron	9,642	3,536	6,106	3,536	3,300	10,795	3.3	7,543	69.9	---	7,543	3,252	1,486	1,766	23.5	8.0
Juab	5,981	2,991	2,990	3,412	3,412	4,597	1.3	2,566	55.8	---	2,566	2,031	---	2,031	---	---
Kane	2,299	2,299	---	---	4,105	2,667	0.6	---	---	---	---	2,667	1,645	1,022	---	---
Millard	9,387	6,648	---	---	6,648	7,866	1.2	---	---	---	---	7,866	3,178	4,688	---	---
Morgan	2,519	2,519	---	---	610	2,837	4.7	---	---	---	---	2,837	1,299	1,538	---	---
Plute	1,911	1,911	---	---	753	1,436	1.9	---	---	---	---	1,436	---	1,436	---	---
Rich	1,673	1,673	---	---	1,022	1,685	1.6	---	---	---	---	1,685	---	1,685	---	---
Salt Lake	274,895	41,456	233,439	41,456	764	383,035	501.4	346,295	90.4	322,681	23,614	36,740	4,863	31,877	48.3	0.7
San Juan	5,315	5,315	---	---	7,884	9,040	1.1	---	---	---	---	9,040	3,650	5,390	---	---
Sanpete	13,891	13,891	---	---	1,597	11,053	6.9	---	---	---	---	11,053	6,171	4,882	---	---
Sevier	12,072	7,860	4,212	7,860	1,932	10,565	5.5	4,412	41.8	---	4,412	6,153	1,618	4,535	4.8	21.7
Summit	6,745	6,745	---	---	8,911	5,673	3.1	---	---	---	---	5,673	1,366	4,307	---	---
Tooele	14,636	7,367	7,269	7,367	6,911	17,868	2.6	9,133	51.1	---	9,133	8,735	2,156	6,579	25.6	18.6
Utah	10,300	7,455	2,845	7,455	4,476	11,582	2.6	3,655	31.6	---	3,655	7,927	---	7,927	12.5	6.3
Wasatch	81,912	64,939	64,939	16,973	1,998	106,991	53.5	90,167	84.3	60,795	29,372	16,824	2,699	14,125	30.6	0.9
Washington	5,574	2,638	2,936	2,638	1,194	5,308	4.4	2,936	55.3	---	2,936	2,372	---	2,372	---	---
Wayne	9,836	5,274	4,562	5,274	2,425	10,271	4.2	5,130	49.9	---	5,130	5,141	1,251	3,890	4.4	12.5
Weber	83,319	12,880	70,439	12,880	549	110,744	201.7	96,106	86.8	96,106	---	14,638	3,000	11,638	32.9	13.7

Source: U. S. Bureau of the Census, Census of Population.

Population Changes in Utah Counties



Source: Utah Economic and Business Review, April 1965

TABLE 8

Projected Population of Utah by County, 1965-2020.*

County	Population (hundreds)			Percent Increase from 1965 to 1975	Population (hundreds)			Percent Increase from 1965 to 2020
	1965	1970	1975		1980	2000	2020	
Beaver	42	43	44	5	45	50	53	26
Box Elder	288	315	343	19	378	560	755	162
Cache	412	455	492	19	530	650	760	84
Carbon	180	180	190	6	200	250	300	67
Daggett	7	8	9	29	10	15	20	186
Davis	840	1,006	1,190	42	1,380	2,200	3,010	258
Duchesne	66	66	67	2	68	72	76	15
Emery	58	61	64	10	68	84	100	72
Garfield	32	33	34	6	35	40	46	44
Grand	75	77	79	5	81	100	120	60
Iron	109	113	117	7	121	147	180	65
Juab	47	48	50	6	52	60	70	49
Kane	26	28	30	15	110	120	130	400
Millard	75	78	80	7	82	90	100	67
Morgan	31	35	38	23	42	50	60	94
Piute	14	14	14		14	15	16	14
Rich	15	16	16	7	17	20	25	67
Salt Lake	4,466	5,170	5,950	33	6,840	10,150	13,600	205
San Juan	77	82	85	10	90	110	134	74
Sanpete	109	111	113	4	115	120	130	19
Sevier	98	100	102	4	105	130	140	43
Summit	60	65	71	18	77	105	120	100
Tooele	223	246	268	20	294	360	400	79
Uintah	126	135	143	13	150	250	400	217
Utah	1,180	1,305	1,430	21	1,580	2,210	2,800	137
Wasatch	54	57	60	11	62	80	90	67
Washington	104	109	113	9	115	140	150	44
Wayne	16	17	18	13	19	22	25	56
Weber	1,220	1,347	1,490	22	1,640	2,300	2,940	141
State Total	10,050	11,320	12,700	26	14,320	20,500	26,750	166

* Populations on July 1 for years shown.

From: Utah State Planning Program, Population Projection, (November, 1965), Salt Lake City, Utah.

From 1910 to 1943 Utah had a net out-migration. Since then, the trend has reversed.

Economic changes, such as more tourism, less agriculture, and sizeable numbers of government workers, all affect the population size and composition.

B. Income

1. Personal Income

Utah's 1963 sources of personal income are compared with the nation's in Table 9. 24/ Though much of Utah is agriculture oriented, personal income from this sector amounted to only 3% of the state total, less than the 4.4% national average. Income from mining, contract construction, trade, and government was all higher than the national average. Personal income from the government sector in Utah (21.1%) was much higher, exceeding the national average by nearly 7%. See Table 10 for the 1963 personal income in dollars. 25/

Personal income in Utah counties for the years 1958-1962 (Table 11) ranks the counties in about the same order as for population. 26/ Total personal income in the state for 1965 was \$2,341,000,000, or 80% of the gross state product of \$2,926,250,000. 10/

Utah ranks fourth among its six neighboring states in per capita personal income in 1963 (Table 12). It is about 15% less than the figure for the United States. 24 & 27/

Table 13 shows the 1963 average monthly wage for major non-agricultural industries in Utah counties. 28/ It is interesting to note that services and trade wages, both of which are related to public lands through tourism, are generally much lower than the overall state average. Mining wages are higher, while government is about the same as the state average.

2. Family Income

Data on family income (Table 14) reflects purchasing power and the amount which families can afford to spend on such things as recreation and outdoor activities. 1/ Wide variation exists in family income among Utah counties. Daggett County, one in which BLM administers about a fourth of the land area, shows the highest family income, probably due to the Flaming Gorge dam construction project underway when the income survey was made. Generally, the counties with heavy populations show a high family income, and those with low population and agricultural orientation

TABLE 9

Percentages of Total Personal Income
From Major Industrial Sources
In Utah and The Nation, 1963

	Utah	Continental U.S.
<u>Basic Physical Production</u>		
Agriculture	3.	4.4
Mining	4.8	1.2
Manufacturing	19.7	29.2
<u>Utilities and Transportation</u>	8.3	7.4
<u>Contract Construction</u>	<u>8.8</u>	<u>6.4</u>
Sub Total Production	<u>44.6</u>	<u>48.6</u>
<u>Wholesale & Retail Trade</u>	19.7	19.1
<u>Finance and Insurance</u>	4.3	5.2
<u>Service</u>	10.2	13.5
<u>Government</u>	21.1	13.2
<u>Other Miscellaneous</u>	<u>0.1</u>	<u>0.4</u>
Sub Total Service	<u>55.4</u>	<u>51.4</u>
TOTAL	100.0	100.0

Note: Total personal income (millions of dollars); Utah, \$2,083; the nation, \$461,610. Does not include transfer payments, unemployment insurance, welfare, etc.

Source: U. S. Department of Commerce, Survey of Current Business, August, 1964.

TABLE 10

Personal Income in Utah, by source, 1963

	Amount (millions)	Percent of Total
Farm	\$ 51	2
Private nonfarm		
Manufacturing	342	16
Trade	342	16
Property	252	12
Services	177	9
Construction	152	7
Mining	84	4
Transportation	96	5
All other (net)	73	4
Government	514	25
TOTALS	\$ 2,083	100

Source: Utah Foundation, Statistical Abstract of Government in Utah, January, 1965), Salt Lake City, Utah

TABLE 11

PERSONAL INCOME IN UTAH COUNTIES 1958-1962 1/
(Thousands of Dollars)

County	1958	1959	1960	1961	1962
Beaver	5,615.0	6,818.0	7,055.6	7,101.4	7,860.8
Box Elder	40,212.4	49,775.7	55,132.2	69,195.9	82,300.4
Cache	39,837.1	47,412.7	50,224.3	51,630.8	58,124.9
Carbon	37,831.6	36,016.0	36,153.0	36,014.0	37,206.6
Daggett	1,367.1	2,166.2	2,006.2	5,520.9	8,175.6
Davis	67,324.4	125,042.6	133,674.6	143,284.3	160,213.4
Duchesne	10,779.3	9,393.6	9,549.5	10,052.4	10,943.4
Emery	10,619.8	9,234.9	9,837.0	9,681.1	9,288.2
Garfield	4,352.5	4,609.6	4,717.3	4,848.9	5,089.9
Grand	9,744.3	9,763.8	10,644.7	13,945.3	18,322.0
Iron	15,616.9	18,352.8	18,667.8	19,582.2	20,521.0
Juab	8,324.3	6,477.8	6,483.4	7,006.1	7,833.4
Kane	3,784.4	3,435.5	3,904.9	4,322.7	5,022.7
Millard	11,645.1	11,887.5	12,178.1	12,107.9	13,662.3
Morgan	4,231.6	4,147.5	4,372.7	4,351.6	4,816.8
Piute	1,916.3	1,659.4	1,647.9	1,705.5	1,966.5
Rich	3,935.1	2,986.6	3,233.5	3,049.1	3,507.5
Salt Lake	745,155.2	825,238.4	867,448.3	933,387.6	1,028,331.3
San Juan	23,255.1	21,626.1	18,118.2	17,797.7	17,779.3
Sanpete	12,059.5	11,440.8	11,900.1	12,501.4	14,794.5
Sevier	12,411.1	14,683.1	14,947.8	15,299.6	16,942.0
Summit	7,129.5	7,759.9	7,923.0	7,973.5	8,562.9
Tooele	38,096.2	38,234.1	40,624.7	43,687.9	47,244.4
Uintah	16,060.6	19,105.9	20,988.1	22,055.3	23,731.4
Utah	138,700.5	139,588.6	160,022.4	166,608.8	174,604.9
Wasatch	7,772.7	7,935.6	8,011.1	8,005.8	9,185.3
Washington	13,191.9	12,826.8	12,444.9	13,030.7	14,152.0
Wayne	2,471.7	2,207.0	2,164.1	2,456.4	2,547.3
Weber	215,007.6	182,186.0	190,655.9	200,746.6	206,969.2
State Total ^a	1,508,400.0	1,631,700.0	1,724,100.0	1,846,100.0	2,019,900.0

^a Figures may not add to total due to rounding.

Source: J. Whitney Hanks, Personal Income in Utah Counties, 1958-1962.

TABLE 12

PER CAPITA PERSONAL INCOME OF UTAH, ADJACENT STATES, AND UNITED STATES 1/
 1929-1963
 (Dollars)

Year	Utah	Idaho	Wyoming	Colorado	New Mexico	Arizona	Nevada	United States
1929	559	503	677	637	407	591	878	703
1930	505	497	584	580	333	514	826	624
1931	378	370	476	474	287	424	649	529
1932	309	270	374	356	209	315	542	401
1933	300	228	365	355	209	300	500	375
1934	314	378	403	369	243	353	531	423
1935	392	393	489	442	286	406	650	472
1936	465	461	542	538	333	454	822	534
1937	450	418	601	531	354	492	748	573
1938	450	421	553	507	333	468	762	527
1939	462	434	585	516	352	477	841	556
1940	487	464	608	546	375	497	876	595
1941	603	594	783	648	471	628	975	719
1942	890	904	944	891	628	898	1,547	909
1943	1,132	1,004	1,142	1,030	758	986	1,493	1,102
1944	1,058	1,080	1,229	1,063	869	1,036	1,477	1,194
1945	1,128	1,114	1,258	1,183	926	1,107	1,585	1,234
1946	1,094	1,169	1,340	1,195	906	1,083	1,717	1,249
1947	1,178	1,251	1,488	1,338	988	1,149	1,732	1,316
1948	1,219	1,281	1,554	1,394	1,075	1,242	1,750	1,420
1949	1,224	1,239	1,588	1,385	1,113	1,245	1,758	1,382
1950	1,282	1,279	1,623	1,444	1,162	1,295	1,938	1,491
1951	1,458	1,446	1,884	1,720	1,290	1,561	2,183	1,649
1952	1,504	1,574	1,828	1,791	1,345	1,655	2,365	1,727
1953	1,526	1,499	1,854	1,714	1,361	1,610	2,357	1,788
1954	1,500	1,494	1,790	1,673	1,388	1,604	2,363	1,770
1955	1,556	1,518	1,810	1,758	1,434	1,696	2,425	1,866
1956	1,645	1,654	1,913	1,851	1,527	1,816	2,420	1,975
1957	1,743	1,678	2,012	1,989	1,610	1,806	2,514	2,048
1958	1,766	1,738	2,137	2,101	1,723	1,868	2,586	2,064
1959	1,859	1,793	2,215	2,182	1,806	1,934	2,720	2,163
1960	1,910	1,765	2,304	2,283	1,800	2,014	2,801	2,217
1961	1,960	1,808	2,268	2,343	1,795	2,044	2,874	2,267
1962	2,103	1,936	2,380	2,388	1,866	2,129	3,137	2,366
1963	2,129	1,934	2,427	2,386	1,887	2,115	3,372	2,443

Source: U.S. Department of Commerce, Personal Income by States Since 1929.
 U.S. Department of Commerce, Survey of Current Business.

Average Monthly Wage in Utah by County and Major Industry - 1964 28/

Geographic Unit	Total	Mfg.	Mining	Constr.	Transp.	Trade	Fin.	Service & Misc.	Govt.
State Total	\$421	\$521	\$588	\$517	\$520	\$335	\$385	\$266	\$444
Beaver	355	*	513	466	*	192	*	148	341
Box Elder	520	*	*	478	505	*	350	199	434
Cache	326	366	*	485	444	248	*	197	350
Carbon	392	360	551	520	472	271	293	181	350
Daggett	466	*	*	*	*	268	*	*	458
Davis (North)	543	556	*	495	552	284	*	280	570
Davis (South)	404	579	583	492	553	297	297	212	378
Duchesne	296	*	*	441	347	246	*	183	323
Emery	448	*	599	690	418	171	*	297	334
Garfield	283	304	*	549	345	136	*	160	368
Grand	482	*	627	489	450	277	*	334	377
Iron	346	*	*	492	509	270	269	213	318
Juab	332	348	594	*	516	195	*	167	284
Kane	291	374	*	549	*	216	*	173	362
Millard	295	283	*	*	483	226	239	170	324
Morgan	432	*	*	626	*	215	*	210	331
Piute	334	*	*	*	*	127	*	155	303
Rich	393	*	*	*	*	228	*	168	311
Salt Lake	426	499	620	523	543	375	401	287	423
San Juan	436	*	523	538	513	301	*	199	418
Sanpete	263	242	*	463	383	186	*	191	288
Sevier	323	372	413	440	447	253	348	171	376
Summit	314	338	511	549	530	153	383	259	295
Tooele	485	480	483	496	465	244	310	241	528
Uintah	413	372	544	510	480	311	341	212	399
Utah	393	597	571	514	472	267	323	241	385
Wasatch	367	231	492	491	*	287	*	177	367
Washington	324	*	*	551	503	270	395	176	378
Wayne	316	*	*	*	*	*	*	202	341
Weber	399	515	559	496	482	294	354	245	445
Statewide 1/	423	*	*	*	*	*	*	*	*

TABLE 14

NUMBER OF FAMILIES, MEDIAN FAMILY INCOME AND PERCENTAGE DISTRIBUTION
OF FAMILY INCOME, BY COUNTY, UTAH, 1959. 1/

County	Number of Families	Median Family Income	Per Cent Having Income		
			Less than \$ 2,000	\$ 2,000 to \$ 4,999	\$5,000 or More
Beaver	1,082	\$ 5,173	7.3	40.2	52.5
Box Elder	5,872	6,139	6.0	26.4	67.6
Cache	8,342	5,054	11.6	37.6	50.8
Carbon	5,084	5,462	8.7	31.3	60.0
Daggett	283	7,100	2.1	19.8	78.1
Davis	14,601	6,548	4.7	19.9	75.4
Duchesne	1,583	4,663	20.0	34.9	45.1
Emery	1,356	4,229	20.7	42.7	36.6
Garfield	866	4,303	11.6	49.0	39.4
Grand	1,544	6,521	6.7	21.9	71.4
Iron	2,487	5,509	10.1	30.8	59.1
Juab	1,112	4,116	15.7	50.1	34.2
Kane	611	5,236	11.1	34.1	54.8
Millard	1,835	3,962	22.5	41.5	36.0
Morgan	655	5,563	5.3	33.0	61.7
Piute	363	4,125	17.1	45.4	37.5
Rich	424	3,681	18.4	51.9	29.7
Salt Lake	91,619	6,265	6.6	24.8	68.6
San Juan	1,889	5,187	20.3	27.0	52.7
Sanpete	2,839	3,755	21.2	46.4	32.4
Sevier	2,671	4,502	14.6	44.9	40.5
Summit	1,395	4,947	9.6	41.4	49.0
Tooele	4,241	5,679	6.8	29.8	63.4
Uintah	2,605	5,281	10.2	35.4	54.4
Utah	23,290	5,536	9.7	31.8	58.5
Wasatch	1,244	4,935	10.1	41.0	48.9
Washington	2,415	4,380	18.4	39.6	42.0
Wayne	415	3,721	25.5	34.7	39.8
Weber	26,650	6,313	6.4	22.9	70.7

Source: U.S. Bureau of the Census, Census of Population, 1960.

show lower family incomes. Duchesne, Beaver, Piute, Sevier, and Wayne Counties are examples of the latter.

3. Income Projection to 1980

Utah's projected personal income (Table 15) shows a continual steady rise through 1980. The 1980 figure nearly doubled Utah's personal income for 1963 (\$2,083,000,000) while population will only expand about 57%. 13/

C. Employment

1. Non-agricultural

For the past twenty years the increase in Utah's employment rate has exceeded the rate of population increase. This has resulted from increased job opportunities for Utah residents, especially women. Some industries providing this additional employment include service, trade, finance, and some smaller communities, apparel manufacturing.

Employment patterns have changed markedly during this period. In the 1950's major industrialization came to the forefront with construction of Geneva Steel Plant and certain mineral industries. Uranium became significant in the early 1950's. In the later 1950's came the tremendous growth in oil, missile, and electronics industries.

The historical trend of employment in Utah's major industries is shown in Table 16. 9/ The figures, which run from 1939 to 1965, show employment in major non-agricultural sectors of the economy increasing at the following rates:

<u>Industry</u>	<u>Rate of Increase (1939-1965)</u>
Finance	362%
Government	289%
Construction	263%
Wholesale Trade	248%
Service	245%
Manufacturing	211%
Retail Trade	180%
Transportation	35%
Mining	22%
Total non-agricultural employment	172%

TABLE 15

Projected Personal Income for Utah 1964-1980 ^{13/}

Year	Total Personal Income (\$millions)
1965	\$ 2,224
1966	2,313
1967	2,405
1968	2,502
1969	2,602
1970	2,706
1971	2,814
1972	2,927
1973	3,044
1974	3,165
1975	3,292
1976	3,424
1977 *	3,550
1978 *	3,700
1979 *	3,875
1980 *	4,050

* Projected by Thomas J. Owen, BLM Economist-Planner, Utah State Office

TABLE 16

EMPLOYMENT AND JOBS IN UTAH BY INDUSTRY
During the Month of June

Year	Total Employed ^{1/}	Total Unemployed ^{2/}	Non-Agricultural Employment	Mining	Construction	Manufacturing
1939	NA	NA	110,800	9,500	4,900	15,800
1940	NA	NA	118,000	10,900	4,800	19,800
1941	NA	NA	128,700	11,300	8,400	20,300
1942	NA	NA	167,800	13,500	18,600	29,900
1943	NA	NA	196,300	13,000	20,000	34,300
1944	NA	NA	171,500	12,500	9,100	24,000
1945	NA	NA	170,500	11,600	5,400	22,700
1946	NA	NA	166,100	7,700	8,300	19,900
1947	NA	NA	179,370	13,321	9,629	26,536
1948	NA	NA	186,801	13,673	12,051	27,677
1949	NA	NA	187,008	13,271	11,864	28,063
1950	258,700	14,000	189,029	12,597	12,951	28,170
1951	281,600	8,400	211,870	13,037	14,664	31,978
1952	281,000	9,800	213,286	12,896	13,096	28,557
1953	282,400	9,000	216,676	13,774	10,310	33,262
1954	275,000	14,100	211,995	12,551	12,179	31,761
1955	294,500	10,500	228,551	15,280	16,331	34,834
1956	307,600	9,800	238,700	15,838	17,058	37,856
1957	310,300	9,900	242,474	16,202	16,067	38,239
1958	315,100	16,800	243,613	13,582	15,859	38,361
1959	333,100	12,200	261,188	14,678	16,852	44,071
1960	343,400	13,400	269,835	14,413	16,665	47,646
1961	349,900	16,500	278,606	13,715	17,167	50,945
1962	363,900	14,800	292,352	13,300	20,419	53,869
1963	370,000	17,500	300,529	11,848	18,924	55,194
1964	368,900	18,400	300,466	11,703	19,594	52,514
1965	367,000	19,400	302,047	11,643	17,805	49,223
Year	Transportation and Utilities	Wholesale Trade	Retail Trade	Finance, Insurance and Real Estate	Service and Miscellaneous	Government
1939	16,300	5,300	18,100	2,800	12,100	19,900
1940	16,600	5,900	22,900	4,000	12,500	20,600
1941	18,100	6,600	24,000	4,100	13,200	22,800
1942	20,200	6,300	24,400	4,300	15,100	35,500
1943	22,700	6,700	26,100	4,300	14,800	54,400
1944	22,800	7,200	24,700	4,200	15,400	51,600
1945	23,500	7,200	24,900	4,300	16,300	54,600
1946	22,300	8,900	29,800	5,000	20,700	43,600
1947	22,451	10,366	30,545	5,422	22,400	38,700
1948	21,980	11,447	30,906	5,567	22,000	41,500
1949	21,754	11,487	30,640	5,919	21,700	42,300
1950	21,349	12,071	31,315	6,432	23,055	41,089
1951	22,188	12,691	33,096	6,707	23,357	54,150
1952	23,256	13,118	34,149	7,270	23,814	57,130
1953	23,566	13,263	35,837	7,797	24,507	54,360
1954	22,662	13,399	35,160	8,460	24,586	51,237
1955	22,777	13,465	37,043	9,575	26,287	52,959
1956	23,558	14,414	39,412	9,688	27,597	53,281
1957	23,487	15,032	39,737	9,832	28,528	55,350
1958	22,758	14,521	40,575	10,260	30,255	57,442
1959	23,016	15,406	43,196	10,914	33,569	59,540
1960	22,731	15,509	45,590	11,474	34,011	61,796
1961	22,292	15,958	45,849	11,739	36,030	64,911
1962	22,487	17,273	47,471	12,192	37,239	68,102
1963	22,254	17,916	48,534	12,627	40,931	72,301
1964	22,143	17,894	49,250	12,951	40,540	73,877
1965	22,051	18,440	50,662	12,942	41,774	77,507

NA Not Available.

^{1/} Includes estimates for self-employed, including family and domestic workers and agriculture. Total employed is adjusted for dual job holding and labor turnover.^{2/} Does not include workers unemployed because of labor disputes.

SOURCE: Prepared by UTAH FOUNDATION from records and reports of the Utah Department of Employment Security.

Table 17 presents recent employment patterns in Utah counties. 9/ A prominent employer in every county is the government. Mining employment is also high in certain counties, reflecting locations of commercial or producible mineral deposits.

2. Agricultural

Agricultural employment by county (Table 18) shows steady decreases in every county from 1950-1961. 29/ This trend contrasts with nearly all other major industrial employment trends, which show increases. Statewide the average annual decrease of agricultural employment is nearly 850 persons, or about 3% per year.

Employment rates (Table 19) in Utah have generally remained high. Not since 1950 has the average yearly unemployment rate exceeded 5%. 28/

D. Imports and Exports

At present only sketchy data is available on import-export flows in Utah. The Bureau of Business and Economic Research is now studying this aspect of the state's economy and will publish the results during 1967.

Certain import-export information, however, has been compiled. For example, Utah produces more beef and veal than it consumes--131 million pounds vs. 105 million pounds. California is the biggest out-of-state buyer of Utah cattle. Lamb and mutton production far exceeds consumption--29 million pounds vs. four million pounds.

Recreation and tourism income brought Utah \$183,000,000 in 1965. This figure has increased by large margins each succeeding year. 11/

Though there are no published figures on net mineral imports and exports for Utah, an official of the Utah Mining Association stated, "It is safe to say that Utah must find other markets for much of its mineral production." Most or all of the production of salt, petroleum, gilsonite, coal, uranium, iron, potash, phosphate, and copper is exported.

E. Economic Impact of Government Programs in Utah

1. Investments and Receipts from BLM-administered Lands

Table 20 summarizes the investments made in various types of range improvements on BLM-administered lands in Utah from 1934 through 1965. Illustration 4 portrays how these investments were made during three time periods.

TABLE 17

NUMBER OF NONAGRICULTURAL EMPLOYEES IN UTAH BY COUNTY AND BY
MAJOR INDUSTRIAL CLASSIFICATION - JUNE, 1965

County	Manufacturing	Mining	Construction	Transportation, Communications and Utilities	Wholesale Trade	Finance, Insurance and Real Estate	Service and Miscellaneous	Government	Other*	Total Nonagricultural Employment
Beaver	74	78	74	*	233	*	110	244	219	1,032
Box Elder	*	19	290	138	*	118	489	1,572	4,327	6,953
Cache	1,181	*	716	271	2,047	*	968	4,019	264	9,466
Carbon	69	1,213	277	512	982	142	435	1,000	*	4,630
Daggett	*	*	*	*	*	*	*	139	60	199
Davis	2,421	37	1,180	405	2,471	330	1,357	14,954	*	23,155
Duchesne	55	*	49	89	266	*	137	246	62	904
Emery	39	276	291	35	154	6	111	416	*	1,328
Garfield	186	*	27	40	157	*	316	336	27	1,089
Grand	*	690	235	182	351	*	206	263	159	2,086
Iron	*	*	171	240	768	83	430	967	531	3,190
Juab	401	214	35	*	310	*	72	368	19	1,419
Kane	43	3	39	*	182	*	171	184	8	630
Millard	68	*	*	138	356	28	121	687	25	1,423
Morgan	*	*	142	*	125	19	34	138	224	682
Piute	*	*	*	*	*	*	*	121	101	222
Rich	*	*	*	*	*	*	*	146	201	347
Salt Lake	27,156	6,438	9,583	13,822	42,251	9,840	23,174	27,664	*	159,928
San Juan	*	345	74	151	259	*	109	477	110	1,525
Sanpete	452	*	175	61	325	*	198	625	40	1,876
Sevier	428	34	56	116	656	75	283	689	*	2,337
Summit	166	29	336	78	303	46	125	343	*	1,426
Tooele	428	117	136	194	823	87	223	5,942	*	7,950
Uintah	137	865	153	147	679	65	296	863	*	3,205
Utah	7,908	193	1,758	1,169	5,502	618	6,667	5,083	*	28,898
Wasatch	82	464	79	*	323	*	158	306	61	1,473
Washington	*	*	157	93	812	64	510	613	174	2,423
Wayne	*	*	*	*	*	*	*	193	48	241
Weber	4,053	60	1,715	3,824	7,376	1,013	4,004	8,909	*	30,954
Statewide and Retroactive	*	*	*	*	*	*	*	*	1,056	1,056
STATE TOTAL	49,223	11,643	17,805	22,051	69,102	12,942	41,774	77,507	*	302,047

* In order to avoid disclosure of data reported by individual firms, detailed statistics were combined and placed in "other" category.

SOURCE: Prepared by UTAH FOUNDATION from records and reports of the Utah Department of Employment Security.

TABLE 18 Agricultural employment in Utah by counties, 1950-1961, annual averages

County	1950	1951	1952	1953	1954	1955	1956	1957	1958	1959	1960	1961
Beaver	474	454	435	418	403	411	393	376	371	355	346	326
Box Elder	2,554	2,438	2,339	2,287	2,164	2,209	2,112	2,017	1,991	1,906	1,859	1,801
Cache	2,678	2,565	2,462	2,408	2,278	2,326	2,222	2,123	2,095	2,006	1,956	1,845
Carbon	321	308	295	289	273	279	266	255	252	241	234	221
Daggett	83	79	76	74	70	72	68	66	64	62	60	57
Duchesne	1,280	1,268	1,217	1,190	1,125	1,145	1,098	1,050	1,036	992	967	912
Emery	831	796	764	747	707	721	690	659	657	622	607	572
Garfield	488	468	449	439	415	424	405	387	383	366	357	364
Grand	154	149	143	140	132	135	130	123	122	117	114	107
Iron	777	744	714	698	661	675	645	616	608	582	567	535
Juab	465	446	428	418	396	404	386	391	364	349	340	321
Kane	242	232	223	218	207	210	202	193	190	182	178	167
Millard	1,441	1,381	1,325	1,292	1,226	1,251	1,196	1,142	1,127	1,081	1,052	993
Morgan	317	304	291	285	270	275	263	251	248	237	232	239
Piute	316	303	290	284	268	274	262	250	247	236	231	195
Rich	352	337	323	316	299	305	292	279	276	264	255	242
Davis	1,323	1,226	1,179	1,151	1,089	1,112	1,062	1,015	1,002	959	935	882
Salt Lake	2,641	2,530	2,428	2,374	2,246	2,293	2,192	2,094	2,067	1,979	1,934	1,819
San Juan	802	767	737	720	682	696	665	643	627	601	585	552
Sanpete	1,954	1,872	1,796	1,845	1,663	1,697	1,621	1,549	1,381	1,465	1,428	1,346
Sevier	1,302	1,248	1,197	1,171	1,108	1,131	1,081	1,033	1,020	976	951	897
Summit	671	643	617	603	571	583	557	532	525	503	490	462
Tooele	369	354	340	332	315	321	307	293	290	277	270	255
Uintah	1,185	1,135	1,089	1,065	1,008	1,029	983	940	927	888	865	816
Utah	3,152	3,019	2,896	2,832	2,680	2,736	2,614	2,498	2,465	2,361	2,302	2,171
Wasatch	554	530	508	497	471	480	459	439	433	415	404	381
Washington	1,037	994	954	933	882	901	861	822	812	778	757	715
Wayne	400	384	393	360	341	348	332	318	313	300	292	277
Weber	1,688	1,616	1,551	1,517	1,435	1,465	1,400	1,337	1,320	1,264	1,233	1,162
Total*	29,900	28,600	27,500	26,900	25,400	25,900	24,800	23,700	23,200	22,400	21,800	20,600

*Rounded to the nearest 100.

Note: Average employment during the entire year.

Source: Estimates by Utah Department of Employment Security. 1962.

INVESTMENTS MADE IN UTAH'S RANGELAND-ADMINISTERED LANDS
FOR DEVELOPMENT & CONSERVATION OF THE RANGE RESOURCE 16/

TABLE 19

Unemployment Data for Utah (1950-1964) 28/

Year	Total Unemployed Persons	Unemployment Rate (%)
1950	14,000	5.9
1951	8,800	3.2
1952	8,600	3.3
1953	9,000	3.0
1954	14,000	4.4
1955	11,500	4.1
1956	10,000	3.2
1957	10,900	3.5
1958	16,200	4.7
1959	14,400	4.0
1960	15,400	4.6
1961	17,300	4.9
1962	15,900	4.3
1963	17,600	4.6
1964	19,300	4.7

TABLE 20

INVESTMENTS MADE IN UTAH'S BLM-ADMINISTERED LANDS
FOR DEVELOPMENT & CONSERVATION OF THE RANGE RESOURCE 14/

District or Area Utah BLM

Time Period 1934-1965

Range User Oriented Investments

Type of Practice	BLM Funds		Contributed Funds	Section 4 Permits
	Appropriated	R.I.		
Predator Control	\$ 263	\$ 2,083	\$ 664	\$
Cattleguards	64,736	16,014	22,667	
Fences	1,641,323	282,366	997,891	247,525
Stock Trails	33,831	19,114	14,266	
Corrals	11,992	32,097	70,209	
Water Pipeline	179,514	18,853	110,958	16,022
Water Storage Facilities	13,454	7,535	13,351	11,314
Wells	50,390	184,853	140,442	
Sub-Total	\$ 1,995,503	\$ 512,915	\$ 1,370,448	\$ 274,861

Resource Oriented Investments

Brush Control	\$ 144,701	\$ 5,629	\$ 30,445	\$ 588
Pitting, Furrowing-Cont.	10,745	293	14,961	
Pest Control	2,798	2,571	4,850	
Seedings	1,538,718	48,459	384,266	15,390
Weed Control	5,859		459	
Detentions, Checks, Dikes, Diversions	315,378	22,560	92,792	1,895
Reservoirs	153,312	303,823	175,174	87,869
Springs	128,599	67,460	70,091	30,854
Truck Trails	154,963	231,955	178,194	
Bridges		6,232	943	
Boundary Posting	2,071	2,581	1,412	
Study Plots	37,721	9,675	25,770	
Miscellaneous	41,432	1,171	15,162	
Sub-Total	\$ 2,536,297	\$ 702,409	\$ 994,519	\$ 136,596
Total of columns	\$ 4,531,800	\$ 1,215,324	\$ 2,364,967	\$ 411,457

Grand Total of this Page \$ 8,523,548

ILLUSTRATION 4

SOURCES AND AMOUNTS OF FUNDS INVESTED TO IMPROVE UTAH'S BLM-ADMINISTERED LANDS, 1934-1965

(Funds relate primarily to range and watershed resources)

Millions
of
Dollars

\$9

\$8

\$7

\$6

\$5

\$4

\$3

\$2

\$1

- Appropriated Funds

- Range Improvement
Funds

- Contributed Funds

- Section 4 Permits

Investment --
Period

1934-
1945

1946-
1955

1956-
1965

1934-
1965

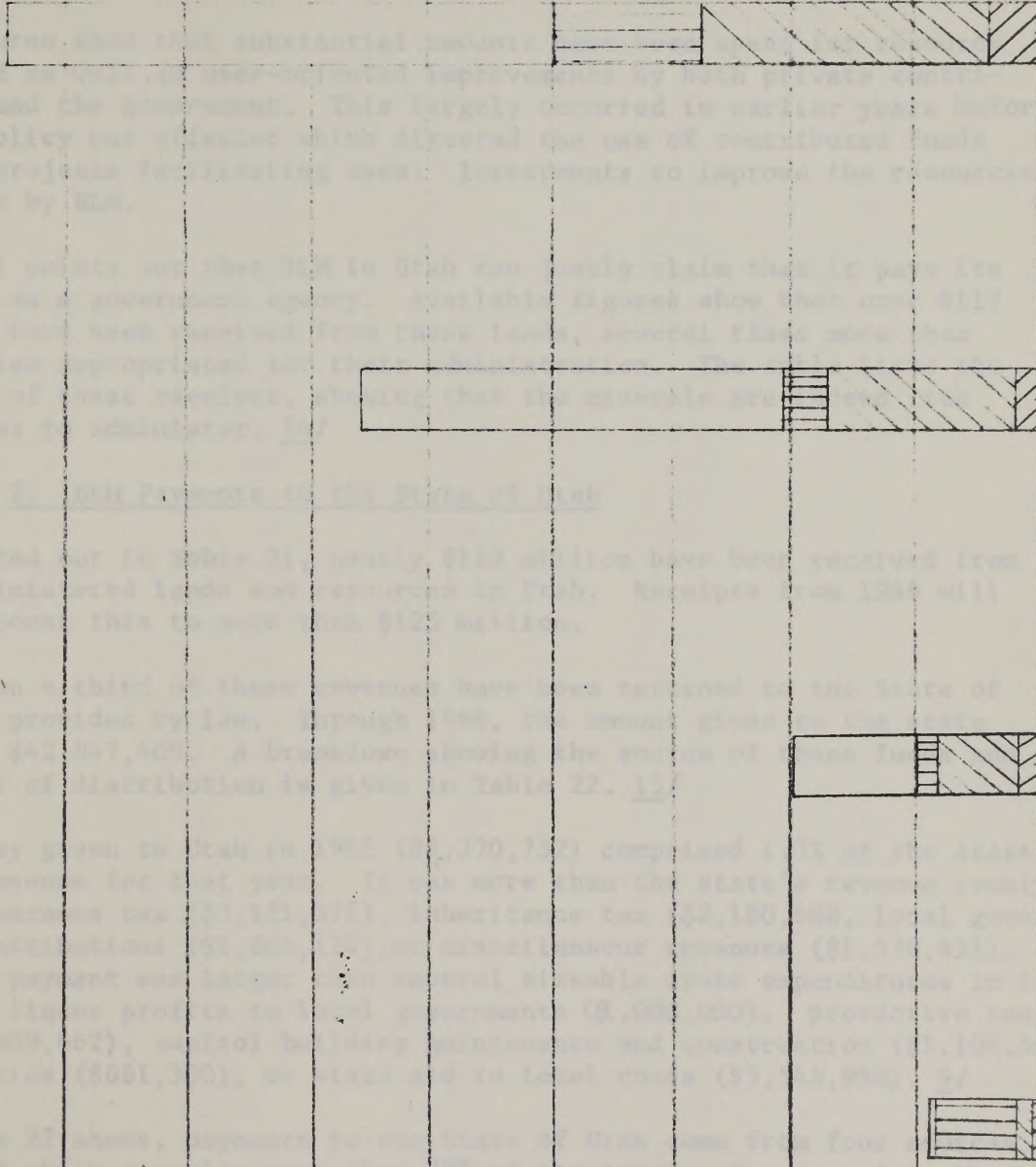


Illustration 4 points out that investments made with range improvement funds were quite heavy in the 1934-1945 period. This resulted mainly from a different accounting and fund distribution system in effect during that period.

The figures show that substantial amounts have been spent for resource oriented as well as user-oriented improvements by both private contributors and the government. This largely occurred in earlier years before a BLM policy was effected which directed the use of contributed funds toward projects facilitating uses. Investments to improve the resources are made by BLM.

Table 21 points out that BLM in Utah can justly claim that it pays its own way as a government agency. Available figures show that over \$117 million have been received from these lands, several times more than the monies appropriated for their administration. The table lists the sources of these receipts, showing that the minerals are indeed rich resources to administer. 14/

2. BLM Payments to the State of Utah

As pointed out in Table 21, nearly \$118 million have been received from BLM-administered lands and resources in Utah. Receipts from 1966 will likely boost this to more than \$125 million.

More than a third of these revenues have been returned to the State of Utah as provided by law. Through 1966, the amount given to the state totaled \$42,847,409. A breakdown showing the source of these funds and the year of distribution is given in Table 22. 15/

The money given to Utah in 1965 (\$3,770,752) comprised 1.3% of the state's total revenue for that year. It was more than the state's revenue received from severance tax (\$3,121,371), inheritance tax (\$2,180,688, local government contributions (\$1,204,124), or miscellaneous revenues (\$1,578,651). The BLM payment was larger than several sizeable state expenditures in 1965, such as liquor profits to local governments (\$1,000,000), protective inspection (\$909,662), capitol building maintenance and construction (\$1,106,568), aeronautics (\$661,300), or state aid to local roads (\$3,545,998). 9/

As Table 22 shows, payments to the State of Utah come from four sources, three of which comprise more than 99% of the total. Payments from the three major sources are derived as follows: 15/

A. Public land and material sales--4% of the gross receipts from sale of public lands and materials in Utah is given to the state.

TABLE 21

CASH RECEIPTS FROM BLM-ADMINISTERED LANDS AND RESOURCES

Fiscal Years	IN UTAH 14/					
	All Mineral Receipts	Grazing	Public Land Sales	Fees & Commissions	Misc.	Total
	\$	\$	\$	\$	\$	\$
1921-)						
1937)---	1,070,273					1,070,273
1901-)						
1939)---			4,389,420			4,389,420
1934				* 2,000	* 2,000	4,000
1935		* 75,000		* 2,000	* 2,000	79,000
1936		* 75,000		* 2,000	* 2,000	79,000
1937		* 80,000		* 2,000	* 2,000	84,000
1938	121,980	* 85,000		* 2,000	* 2,000	210,980
1939	130,740	* 90,000		* 2,000	* 2,000	224,740
1940	141,373	* 95,000	3,535	* 2,000	* 2,000	243,908
1941	188,108	* 100,000	4,380	2,025	1,701	296,214
1942	251,660	* 105,000	1,719	2,287	2,720	363,386
1943	334,718	* 110,000	1,653	1,809	1,911	450,091
1944	350,328	* 115,000	2,407	3,619	2,698	474,052
1945	343,064	* 120,000	10,564	4,054	2,767	480,449
1946	303,848	* 125,000	3,078	3,990	2,062	437,978
1947	559,366	128,308	11,912	5,065	3,738	708,389
1948	660,495	197,831	5,756	12,635	3,124	879,841
1949	978,271	188,564	7,138	28,127	4,254	1,206,354
1950	851,690	192,727	15,193	37,327	16,934	1,113,871
1951	1,548,448	204,563	20,248	46,287	26,753	1,846,299
1952	2,881,760	278,112	48,550	39,059	22,876	3,270,357
1953	2,717,075	278,310	54,044	46,170	36,680	3,132,279
1954	3,337,351	268,627	48,104	60,171	26,186	3,740,439
1955	3,740,786	277,650	99,545	67,267	22,581	4,207,829
1956	3,779,550	317,617	87,168	91,902	25,173	4,301,410
1957	5,451,922	257,020	58,192	139,412	29,340	5,935,886
1958	5,411,314	332,429	32,223	145,322	26,931	5,948,219
1959	6,916,577	345,416	105,204	144,764	23,690	7,535,651
1960	7,280,527	354,820	62,525	218,462	37,495	7,953,829
1961	7,806,919	345,645	40,168	341,780	40,272	8,574,784
1962	15,527,655	311,776	40,500	325,641	34,940	16,240,512
1963	10,051,369	354,557	93,701	359,386	48,768	10,907,781
1964	9,687,663	470,861	49,253	325,165	62,830	10,595,772
1965	9,937,656	404,728	80,421	453,329	41,631	10,917,765

TOTALS \$102,362,486 \$6,684,561 \$5,376,601 \$2,919,055 \$562,055 \$117,904,758

* Figures are estimated

TABLE 22

Payments to the State of Utah from Public Land Revenues 15/Source of Payments

Year	Public Land & Material Sales	Mineral Leases	Taylor Grazing Districts	Other	Total
Thru 1941	\$184,830	\$	\$	\$	184,830
1934-1947			64,154		64,154
1921-1937		384,478			384,478
1938		61,533			61,533
1939		49,061			49,061
1940		53,015			53,015
1941		70,540			70,540
1942	63	94,373			94,436
1943	61	125,519			125,580
1944	60	131,373			131,433
1945	100	128,649			128,749
1946	65	113,943			114,008
1947	596	209,762			210,358
1948	230	247,686	19,816		267,732
1949	286	365,433	17,693		383,412
1950	1,009	319,384	18,029		338,422
1951	1,610	580,469	19,609		601,688
1952	2,616	1,077,122	28,860		1,108,598
1953	3,331	1,017,045	28,942		1,049,318
1954	2,619	1,251,327	27,918		1,281,864
1955	4,549	1,402,700	27,927		1,435,176
1956	4,092	1,415,252	29,099		1,448,443
1957	3,004	2,044,039	23,976		2,071,019
1958	1,798	2,027,027	31,133		2,059,958
1959	4,639	2,591,991	32,403		2,629,033
1960	3,461	2,729,621	33,258		2,766,340
1961	2,553	2,927,015	32,490		2,962,058
1962	2,141	5,820,036	29,349		5,851,526
1963	4,611	3,772,121	31,776		3,808,508
1964	2,416	3,637,662	39,131	401	3,679,610
1965	3,669	3,733,216	33,768	99	3,770,752
1966	2,709	3,622,874	36,194		3,661,777
Total	\$237,118	\$42,004,266	\$605,525	\$500	\$42,847,409

B. Mineral leases -- 37.5% of the gross receipts from mineral leases on public lands is given to the state.

90% of the gross receipts from mineral leases on state selected lands is given to the state.

C. Grazing fees -- 12.5% of two-thirds of the grazing fee receipts is given to the state.

3. HHFA 701 Grants 13/

Several Housing and Home Finance Agency 701 grants have been made in Utah. As of July 1, 1966, the following grants had been made:

<u>Receiving Group</u>	<u>Amount Received</u>
Salt Lake County	\$250,000
South Davis County	94,500
Utah County	68,000
Weber County	40,500
San Juan County	30,000
Duchesne County	15,500
Grand County	15,300
Summit County	14,500
Park City	13,000
Morgan County	12,000
American Fork Community	8,300
Pleasant Grove Community	<u>4,800</u>
TOTAL	\$566,400

The state planning coordinator heads this program in Utah and receives applications for planning grants. The coordinator's office states that several counties, other than the above, are interested in the program, including Kane and Uintah Counties. It is expected that more 701 grants will be made but that the planning assistance program will expand rather slowly. Specific uses of 701 funds are preparation of county and city master plans, planning for public facilities, planning for transportation facilities, and making long range fiscal plans. These federal grants pay for as much as three-fourths of the planning cost.

4. Major Government Projects in Utah

Federal government purchases of goods and services have influenced Utah's economy beyond the impact of direct government employment. Agriculture,

minerals, manufacturing, research, services, and missiles are all included in activities strongly influenced by government spending.

The most detrimental government action occurred in the 1962-64 period when a shift in the missile industry reduced employment significantly in northern Utah. The state government is now trying to expand and diversify its industrial base so that any future sudden changes in government or industrial programs will not have such a disrupting effect.

Large Bureau of Reclamation projects have stimulated many local economies in the state. Beginning in 1905 with the Strawberry Valley Project, the Bureau of Reclamation has since completed eight other similar projects. Future plans include construction of the Bear River and Dixie Projects. The Central Utah Project, now in the planning stage, will have significant economic impact with \$300 million estimated as the initial phase cost. These reclamation and power projects also provide many outdoor recreation opportunities. 6/

Many of these reclamation projects significantly change the use of BLM-administered lands. They often make recreation the major land use and restrict less intensive uses such as grazing, mining, and timber production.

5. Economic Development Programs

In 1965 ten Utah counties were designated Economic Development Administration (EDA) counties. They include San Juan, Garfield, Beaver, Juab, Emery, Carbon, Duchesne, Sanpete, Wasatch and Summit Counties. There are large amounts of BLM-administered lands in all these counties but Wasatch and Summit. An EDA county is one in which chronic unemployment and a depressed economy have prevailed.

"Tourism in Utah," the report of a recent study by the Bureau of Economic and Business Research, pointed out how the EDA counties could develop their tourism and recreation potential. Specific projects were proposed for each county. One area of great potentiality was the San Juan County Canyonlands area where BLM-administers most of the land. 12/

BLM received special accelerated public works (APW) appropriations in 1962 to build projects in depressed counties. With this money (\$1,383,100) BLM provided 177,960 man-hours of employment. 14/ By county, BLM expenditures were:

Utah	\$104,000	Sanpete	\$ 32,000
Juab	120,000	Garfield	222,000
Carbon	174,100	Washington	270,000
Emery	36,000	San Juan	425,000

The following projects were begun or completed with APW funds:

- Construction of Escalante Canyon, Price Canyon, and Hatch Point Roads.
- Construction of the Price district office building.
- 725 acres of timber stand improvement.
- 27 miles of stock trail construction.
- 190 miles of drift fences.
- 18 miles of hiking trail.
- 50,000 posts cut.
- 6 campgrounds and three overlook points constructed
- 256 check dams constructed
- 10 spring developments
- 4 water storage tanks installed
- 25 cattleguards installed
- 4,000 acres of seeding and chaining projects
- Contour trenching
- Sign construction.

6. Past, Present and Future Public Lands Occupancy Demands

To give perspective to long-term public land ownership changes the tables in this section will review land status statistics for the 10-year period 1956-1965.

BLM management programs must always consider the possibility that public lands may change ownership or administrative responsibility. Tables 23 and 24 show just how significant these changes have been.

Table 24 shows acres of public land patented each fiscal year from 1956 through 1965 by various types of land transfers. 15/

The land status figures point out clearly that substantial yearly changes in public land ownership are normal in Utah. Withdrawals for other federal agencies have relatively little effect on the economy--they merely reflect administrative changes. Lands transferred into state and private ownership, however, do affect the economy in several ways.

All lands transferred from public to private ownership go on the tax rolls, thereby increasing county revenues. A change of wealth from federal government to private hands occurs in cases of lands transfers under agricultural land laws. In those cases the government receives relatively little revenue for the land. Lands sold or exchanged by the government do not represent a change of wealth because the government receives equal value for them either in the form of money or other lands.

Transfer of public lands to the state also has an impact on the economy, but in a more indirect manner. Revenues from state-owned lands go into the

TABLE 23

Net acres transferred from (-) or to (+) BLM
administration in Utah for different types of withdrawals 15/

Year	Agency *						NET CHANGE
	AEC	DOD	USFS	FPC	BR	BSFW	
1956	+52,062	0	-520	+ 5,360	-226,610	0	-169,708
1957	+ 5,072	0	0	+ 120	+ 45,337	0	+ 50,529
1958	+21,440	+286,401	-1,370	+ 25	+118,638	0	+425,134
1959	- 2,105	- 2,665	0	+32,590	- 17,261	0	+ 12,559
1960	0	0	0	+ 40	- 60	-14,145	- 14,165
1961	0	0	0	+ 864	+ 4,489	+14,070	+ 19,423
1962	+ 50	- 2,352	0	+ 2,341	+ 18,434	- 120	+ 18,353
1963	0	0	0	+ 2,813	+ 840	- 4,195	- 542
1964	0	+ 1,233	-690	+ 6,865	+140,697	0	+148,105
1965	0	0	-5,444	0	+ 4,429	0	- 1,015

Net change

+78,519	+282,617	-8,024	+51,018	+88,933	-4,390	+488,673
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*AEC - Atomic Energy Commission

DOD - Dept. of Defense

USFS - U.S. Forest Service

FPC - Federal Power Commission

BR - Bureau of Reclamation

BSFW - Bureau of Sports Fisheries and Wildlife

TABLE 24

Types and Amount of Land Transfers from
Public Ownership *, 1956-1965

Year	Min	ST	R&PP	EX	SG	H	DL	PS	Total
1956	4,742	10	145	42,290	26,097	7,192	832	22,296	103,604
1957	1,542	114	842	43,628	--	8,228	1,040	10,445	65,839
1958	235	19	1,138	12,894	--	3,440	1,470	6,489	25,685
1959	1,726	240	1,901	6,177	80	4,694	2,066	6,892	23,776
1960	302	318	44	5,256	--	2,853	2,259	2,003	13,035
1961	50	148	276	80	21,028	3,242	1,803	1,265	27,892
1962	243	115	369	1,885	22,338	480	2,163	2,369	29,962
1963	670	95	8,716	2,295	58,373	2,669	1,710	5,186	79,714
1964	0	39	5,226	11,048	119,833	2,677	684	2,233	141,740
1965	250	10	2,378	35,731	26,550	1,438	479	6,045	72,881

**

TOTAL	9,760	1,108	21,035	161,284	274,299	36,913	14,506	65,223	584,128
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* Min Mining law

ST Small Tract Sales

R&PP Recreation & Public Purposes Act

EX Exchange (all types)

SG State Grants (lieu selection & Other)

H Homesteads

DL Desert Land Law

PS - Public Sale Law

** BLM received 183,565 acres in exchange

school fund, thus all new lands acquired by the state add revenue for that use. State revenues from BLM-administered lands go into the general fund.

The demand for public land by Utah communities has not been large in the past. Several small transfers have been made for such uses as schools, recreation and garbage dumps.

Future demands for these lands by communities may increase as populations grow and the structure of the Utah economy changes. The following list shows communities and counties which have shown interest in acquiring BLM-administered lands:

<u>Utah Community or County</u>	<u>Public Lands Wanted For:</u>
St. George	Industry, golf course, residential
Cedar City	Garbage dump, residential
Parowan	Residential, industry
Moab	Industry, residential
Price	Residential, garbage dump
Vernal	Garbage dump
Tooele	Residential industrial, recreation, commercial
Bluff	Recreation
Hurricane	Industry, recreation, residential
Marysville	Recreation, garbage dump
Fillmore	Recreation
Uintah County	Industry
Kane County	Industry and residential
Daggett County	Recreation

7. Reclamation Programs in Utah

Utah's rural economic development has been affected significantly by large-scale reclamation projects in recent years. Glen Canyon Dam and Flaming Gorge Dam are new projects which have had great impact on county and state-wide economies. Nearly a half million people in Utah get all or part of their municipal or industrial water from Reclamation projects.

The Central Utah Project is Utah's most important future project. Now in its early planning stage, Central Utah Project's \$300 million initial phase would develop supplemental irrigation, municipal, and industrial water. About 153,000 acres of farmland would receive water from the project, including 40,000 acres now unirrigated. This initial phase would also supply enough municipal and industrial water for an additional 320,000 residents in Utah and would provide three billion kilowatt-hours of electric energy. 6/

A later stage of the Central Utah Project calls for construction of a tunnel beneath the Uinta Mountains to channel water from Flaming Gorge Reservoir to Uintah Basin. 6/

8. Defense Programs in Utah

Defense spending comprises a sizeable portion of Utah's income. In 1965 this industry employed 35,000 persons (10% of all Utah employed persons). Total defense payroll was more than \$251 million (military, \$156 million; defense manufacturing plants, \$95 million). 17/

The large spending of defense industries in Utah, while welcome, has obvious dangers. It ties the state economy in urban areas closely to defense industry contracts, and the economy is either buffeted or blessed, depending on the state of defense demands.

The defense industry has relatively little direct economic influence in Utah's "rural" counties. It is concentrated on the Wasatch Front, mainly in Box Elder, Weber, Davis, Salt Lake and Tooele Counties. These counties contained 85% of Utah's defense workers during the 1950's.

Defense industry installations which are all or partly located on public land withdrawals include: 17/

- Fort Douglas
- Deseret Chemical Depot
- Camp W. G. Williams
- Wendover Air Force Base
- Wendover Weapons Range Complex
- Dugway Proving Ground
- Vernal Air Force Seismological Site
- Utah Ordnance Depot
- Blanding Missile Launch Site
- Green River Test Complex
- Hill Air Force Base

F. Basic Industries in Utah

Major industries in Utah are classed as:

- Manufacturing
- Finance
- Construction
- Trade
- Transportation
- Agriculture
- Mineral
- Government
- Timber

Of these, agriculture, timber production, and mining directly utilize products from the public lands. To some extent outdoor recreation involves all Utah industries, at least persons employed in them. Transportation relates to BLM responsibilities in that many Utah roads and highways traverse public domain lands. Trade includes establishments which serve many kinds of public land users. Tourists are becoming more important in this category.

Thus, the public lands affect nearly all Utah industries in some way. This discussion, however, will be limited to industries most directly served by or dependent on products yielded by BLM-administered lands.

1. Timber Production

Tables 25, 26, 27 and 28 show the magnitude of Utah's forest resource and the amount of timber harvested annually. Timber production does not play a major role in the state economy nor does it compare with the size of this industry in most other western states.

The number of active sawmills in Utah has varied from about 50 to 75 in recent years. There have also been about 125 lumber and wood product establishments employing more than 1,000 persons. These establishments pay wages of about \$4.3 million each year. Logging camps, sawmills, and planing mills account for about one-half of this payroll. 3/

Little sawtimber is harvested from BLM-administered lands in Utah. In 1965 only 357,000 board feet was taken from these lands; statewide, 67,251,000 board feet was harvested.

More significant are the BLM woodland products. Nearly 11,000 pinon Christmas trees were cut in 1965, 10% of the statewide production of 103,000 trees.

No figures are available for the statewide production of fuelwood and fenceposts, but 161,800 cubic feet of fuelwood and 48,300 fenceposts were harvested from BLM-administered lands. It is believed that these are substantial portions of the total volume of these products harvested in Utah. 14/

2. Agriculture

Agriculture has been a sizeable industry in Utah since the pioneers settled in 1847. But it is a changing industry. Increased mechanization, higher productivity per individual, and larger farms and ranches through consolidation are indicators of this change.

Utah's farms now number less than 15,800; about half the peak number of 30,800 in 1936. The average value of land and buildings per farm in 1964 was about \$60,445 compared to \$6,000 in 1940; \$10,000 in 1950; and \$39,000 in 1960. 29/

TABLE 25

*Area by land classes, Utah, 1961 ^{3/}

<u>Land Class</u>	<u>Thousand acres</u>
Commercial forest land	3,999
Unproductive forest land	10,701
Productive-reserved forest land	<u>165</u>
Total forest land	<u>14,865</u>
Nonforest land	<u>37,832</u>
All land	*52,697

* From U. S. Bureau of the Census, Land and Water Areas of the United States, 1960.

Table 26

Area of commercial forest land
by ownership classes, Utah, 1961 ^{3/}

Ownership class	Thousand acres
National Forest	2,783
Other Federal:	
Bureau of Land Management	155
Indian	158
Miscellaneous Federal	- -
Total other Federal	313
State	240
County and municipal	- -
Forest industry	- -
Farmer-owned	540
Miscellaneous private	123
All ownerships	3,999

TABLE 27

Table 19.—Net annual growth and annual cut of growing stock on commercial forest land, by ownership classes, and by softwoods and hardwoods, Utah, 1962 ^{3/}

Species group	All ownerships	National Forest	Other public	Farmer and misc. private
NET ANNUAL GROWTH (Thousand cubic feet)				
Softwoods	33,650	40,031	-3,583	-2,798
Hardwoods	22,446	15,174	2,116	5,156
All species	56,096	55,205	-1,467	2,358
ANNUAL TIMBER CUT (Thousand cubic feet)				
Softwoods	11,766	10,657	235	874
Hardwoods	792	717	16	59
All species	12,558	11,374	251	933

TABLE 28

Table 20.—Net annual growth and annual cut of sawtimber on commercial forest land, by ownership classes and by softwoods and hardwoods, Utah, 1962 3/

Species group	All ownerships	National Forest	Other public	Farmer and misc. private
NET ANNUAL GROWTH (Thousand board feet) ¹				
Softwoods	75,510	113,803	-21,075	-17,218
Hardwoods	19,771	7,296	3,831	8,644
All species	95,281	121,099	-17,244	-8,574
ANNUAL TIMBER CUT (Thousand board feet) ¹				
Softwoods	65,159	59,020	1,303	4,836
Hardwoods	2,092	1,895	42	155
All species	67,251	60,915	1,345	4,991

¹International 1/4-inch rule. Volumes are for trees 11.0 inches d.b.h. and larger. See special note, page 47.

Farm acreages and features vary considerably between counties (Table 29). The average farm in 1964 was largest in Rich County (2,915.6 acres), smallest in Cache County (267.0 acres). This reflects differences in the intensity and type of farming and ranching possible in these two areas. 45/ Ranches are much larger in rural counties where BLM-administered lands are extensive.

Value of all farm products sold in 1964 also varies widely by county, from more than \$18 million in Utah County to less than \$400,000 in Grand County. Livestock and livestock product sales were also lowest in Grand County, which has a high acreage per farm (2,128). 29/

Sale of livestock products provides about 78 per cent of Utah's total cash receipts from farm marketing; crops, 22 per cent. Nationally, the respective figures are 55 per cent and 45 per cent.

A breakdown of cash farm income from livestock products in 1963 is given in Table 30. Beef cattle and calves (\$47,781,000) is by far the biggest income producer with sheep and lamb (\$11,972,000) ranked fourth. 31 & 32/

Thirty-two per cent of Utah's total cash farm income in 1963 came from beef production. Since 1958 beef cattle sales have produced more cash receipts each year than from all crops sold. 31/

In recent years (1963 and 1964) low beef prices resulted partly because the number of cattle increased faster than total consumption. The number of beef cattle and calves in Utah (Table 31) has shown a definite upward trend since 1960, rising from 530,000 to 1965's 591,000. The 1965 figure is the highest ever recorded in Utah. The number of livestock permitted to graze on BLM-administered land from 1940 to 1965 (Table 31) does not show this upward trend. Cattle and horse numbers were fairly stable from 1940 to 1953, averaging about 195,000 per year, then began to drop. In 1964 only 152,455 cattle and horses were permitted on public lands. The number of permitted sheep on BLM-administered lands in 1965 (1,077,364) was only about half those permitted in 1940 (2,084,175). Licensed forage use on public lands is a better use indicator than livestock numbers because it is tied to length of use as well as animal numbers. Table 31 shows that the highest authorized forage use was in 1940 (2,748,270) and that a rather steady decline has occurred since. The lowest use was authorized in 1964 (1,382,657 AUM's), with 1965 showing a modest increase due to greater allowance of cattle use. 32/

For various reasons many livestock operators have not used their permits up to their full limit in past years. The amount of non-use reached a peak in 1960 at about 670,000 AUM's, but decreased to 460,000 AUM's in 1965. Further declines in non-use are expected in years ahead. 14/

TABLE 29

FARMS, ACREAGE, LAND IN IRRIGATED FARMS AND
VALUE OF PRODUCTS BY SOURCE IN UTAH BY COUNTY,
1964

County	Number of Farms	Land In Farms (Acres)	Average Size of Farms (Acres)	Value of Products Sold	
				All Farm Products Sold \$1,000)	All Livestock and Livestock Products Sold (\$1,000)
Beaver	238	244,586	1,028	\$ 3,025	\$ 2,385
Box Elder	1,244	1,733,650	1,394	15,577	9,553
Cache	1,653	441,316	267	14,212	10,536
Carbon	270	427,241	1,582	1,399	1,036
Daggett	41	94,353	2,301	874	834
Davis	743	243,022	327	7,951	5,092
Duchesne	635	521,806	822	4,651	4,111
Emery	490	386,782	789	2,421	2,227
Garfield	267	216,048	809	1,280	1,145
Grand	74	157,488	2,128	378	309
Iron	368	574,800	1,562	4,933	2,655
Juab	253	262,024	1,036	3,100	2,630
Kane	128	258,417	2,019	548	523
Millard	777	640,649	824	7,952	5,374
Morgan	205	235,209	1,147	2,218	2,019
Piute	125	67,895	543	1,254	1,080
Rich	204	594,788	2,915	2,480	2,328
Salt Lake	889	401,698	452	12,231	9,217
San Juan	231	576,599	2,496	2,401	1,883
Sanpete	811	681,873	841	13,241	12,593
Sevier	592	229,269	387	7,648	6,799
Summit	308	436,468	1,149	4,316	3,974
Tooele	244	265,175	1,087	1,236	1,038
Uintah	659	1,335,555	2,027	3,652	3,227
Utah	2,312	695,606	301	18,370	13,480
Wasatch	288	224,916	781	2,645	2,465
Washington	491	534,178	1,088	3,904	2,955
Wayne	219	128,700	588	1,392	1,202
Weber	927	255,770	276	13,496	11,765
State Total	15,759	12,994,823	825	158,783	124,435

Source: U. S. Bureau of the Census, U. S. Census of Agriculture

TABLE 30

Cash Farm Income in Utah from Livestock
and Livestock Products, 1963

<u>Livestock & Livestock Products</u>	<u>1963 (\$000)</u>
Cattle and Calves	\$ 47,781
Dairy Products	29,834
Sheep and Lamb	11,972
Wool	5,438
Turkeys	14,471
Eggs	8,236
Broilers and Chickens	1,084
Hogs	2,350
Other *	<u>8,185</u>
TOTAL	\$129,351

Source: "Cash Receipts from Farm Marketing," Agricultural Statistical Service, U. S. Department of Agriculture, Salt Lake City; and Farm Income Estimates 1949-1963 (a supplement to the Farm Income Situation for July, 1964), U.S. Department of Agriculture August, 1964.

* Horses and mules; mohair and goats; rabbits, mink, foxes, and honey.

TABLE 31

BEEF CATTLE AND SHEEP ON UTAH FARMS

AND

THOSE GRAZING ON BLM-ADMINISTERED LANDS 14 & 32/

1940-1965

Year	Beef Cattle		Sheep & Lambs		AUMs of All Livestock on BLM Public Land
	Utah Farms	*BLM Public Land	Utah Farms	BLM Public Land	
1940	272,000	192,333	2,248,000	2,084,175	2,748,270
1941	291,000	189,429	2,248,000	2,015,444	2,649,055
1942	309,000	205,530	2,312,000	1,998,673	2,585,297
1943	326,000	191,127	2,115,000	1,921,682	2,538,649
1944	356,000	191,440	1,955,000	1,805,924	2,597,566
1945	389,000	202,835	1,840,000	1,778,254	2,506,872
1946	384,000	203,971	1,792,000	1,778,276	2,455,807
1947	375,000	210,727	1,646,000	1,607,978	2,485,521
1948	373,000	197,813	1,469,000	1,661,213	2,407,098
1949	405,000	203,777	1,381,000	1,367,340	2,431,551
1950	423,000	196,171	1,326,000	1,313,296	2,360,944
1951	451,000	188,814	1,332,000	1,298,294	2,346,864
1952	513,000	192,288	1,412,000	1,246,937	2,270,478
1953	558,000	193,004	1,426,000	1,187,425	2,225,419
1954	562,000	186,699	1,383,000	1,173,267	2,149,266
1955	581,000	187,851	1,383,000	1,072,516	2,102,290
1956	541,000	173,836	1,369,000	1,080,920	2,029,076
1957	532,000	148,016	1,301,000	903,674	1,647,949
1958	520,000	175,300	1,249,000	1,106,155	1,956,793
1959	534,000	169,102	1,212,000	1,012,193	1,844,493
1960	545,000	165,133	1,200,000	1,136,799	1,759,466
1961	530,000	160,539	1,212,000	1,089,808	1,757,099
1962	538,000	166,113	1,200,000	1,095,983	1,581,178
1963	547,000	154,787	1,212,000	989,837	1,399,173
1964	573,000	152,455	1,200,000	961,016	1,382,657
1965	591,000	163,365	1,212,000	1,077,364	1,406,776

*Includes small number of horses

Utah's sheep industry is fairly significant, ranking fourth behind beef, turkeys, and dairy products in terms of income. As of January 1, 1964, the number of sheep and lambs on Utah farms represented 4.53 per cent of the national total, ranking Utah eighth among all states. Utah's wool production of 11 million pounds ranked seventh in the nation in 1963. 2/

3. Recreation and Tourism

The Bureau of Economic and Business Research recently published a study on the outdoor recreation habits, demands and attitudes of Utah residents. Following is a verbatim summary of their findings:

- "1. Ninety-three percent of the heads of households in Utah went picknicking at least once in 1964; 71 percent went fishing; 68 percent went camping; 63 percent went hunting; 54 percent went swimming; 42 percent went boating; one out of three went skiing; 30 percent went horseback riding; 27 percent tried water skiing; and 27 percent went golfing at least once.
2. More than 80 percent of Utah families enjoy participation with the head of the family in picnicking, driving, swimming, boating, and horseback riding.
3. Advancing age and declining participation in outdoor recreation activity are associated. In all activities studied a sharp decline begins in the mid-forties and continues through age 65.
4. The most preferred outdoor recreation activities for young people in their twenties are skiing, hunting, golfing, and swimming, in that order.
5. The highest levels of activity in outdoor recreation are associated with people in their early thirties.
6. The most preferred activities for those fifty or older are driving, fishing, and boating. Least preferred are swimming, water skiing, and skiing, in that order.
7. Lower income groups, those making \$5,000 per year and less, show less than average participation in outdoor recreation, and the least proportionate inclination to take up new activities.
8. Higher income classes, those making \$9,000 per year or more, show substantially greater proportionate participation in golfing, water skiing, skiing, and boating.

9. People in middle income groups participate more actively in outdoor recreation than those in either the highest or lowest income classes.
10. Outdoor recreation activities families would most like to begin are boating, skiing, water skiing, fishing, camping, golfing, swimming, and horseback riding, in that order.
11. Families making less than \$5,000 per year showed the greatest interest in taking up driving, hiking, hunting, and camping, in that order.
12. Golfing heads the list of new activities begun in the six-year period, 1959 through 1964, for those making \$8,000 or more. Forty-four percent of the new skiers were in the \$10,000 and above class, as were 35 percent of those who took up water skiing.
13. Families in the high income groups were least interested in taking up camping, hunting, or fishing as new activities.
14. The most important reasons given for beginning new outdoor recreation activity were: the recommendation of friends, family influence, facilities being more accessible, more time, higher income, and facilities being available for the first time, in that order.
15. Respondents volunteered the information that if trailer parking were improved; if recreation facilities were developed on Great Salt Lake; if there was better control of vandalism; and if liquor was sold by the drink, they would be encouraged to increase their participation in outdoor recreation.
16. Low income families have the greatest interest in improvements in horseback riding facilities, more public showers, more campsites, and improved camping facilities.
17. Middle income people would like to see improvements made in camping facilities, horseback riding facilities, more adequate information and an increase in the number of campsites, in that order.
18. High income people would like more motels, improved restaurants, additional boating facilities, and more public showers.
19. Eighty percent of all the heads of households in Utah had a vacation in 1964, but only 39 percent of the families who took vacation trips remained in Utah.

20. Thirty-nine percent of the Utah families who took vacation trips went to other Rocky Mountain states, only 15 percent went to the west coast, and only 5 percent went east of the Rockies.
21. More than one-half of the Utah families taking vacation trips said their major activity had been driving and sightseeing. This was the dominant reason for taking vacation trips.
22. People did participate actively in outdoor recreation activities while on vacation trips. Thirty-eight percent went fishing, 34 percent went camping, 29 percent went swimming, and 19 percent went boating.
23. Younger people on vacations show a preference for horseback riding, hunting, camping, swimming, and water skiing, in that order.
24. People in their 40's prefer golfing, horseback riding, skiing, swimming, and boating while on vacation.
25. Utah families spent two-thirds of their vacation trip expenditure of \$42,000,000 outside the State of Utah. Only \$14,000,000 was spent in the state.
26. During the five-year period, 1860-1964, 73 percent of Utah families visited one or more of the state or federal parks in Utah; 64 percent visited two or more; 51 percent visited three or more; 21 percent visited six or more.
27. In 1964, 48 percent of the families in Utah visited one or more of the state or federal parks within the state.
28. Thirty-five times as many Utah families visited Flaming Gorge as visited the Coral Pink Sand Dunes in the five year period, 1960-1964.
29. More Utah families visited Bear Lake State Park in 1964 than visited Bryce Canyon.
30. More Utah families visited the Dinosaur National Monument in 1964 than visited Glen Canyon Recreation Area, the Pioneer Monument, Timpanogos Cave, or Dead Horse Point.

Licensed hunters have been increasing at a rate comparable to the general population increase. Licensed fishermen, however, have increased at a

greater pace than the population. Using these trends as established over a period of ten years, projections have been made for resident fishing and hunting license sales to 1975 (Table 32).

Total recreation visits to National Forests increased 200 percent, from 2,975,900 in 1950 to 8,881,500 in 1963, as follows:

Total visitors	8,881,500
Camping	1,499,200
Picnicking	2,617,900
Winter sports	662,000
Organizations, resorts, residences	209,100
Sightseeing	2,309,800
Swimming, boating, hunting, etc.	1,583,500

As would be expected, 83 percent of the visits to National Forest areas for 1963 were to three forests immediately adjacent to the heart of the state's population. This would indicate the attraction of the mountain retreat within an hour's travel of the city; the lack of facilities in the metropolitan area proper; or both.

Recreation visits to reservoirs in Utah, which were constructed by the Bureau of Reclamation, show an increase of 80 percent, from 454,080 in 1959 to 825,573 in 1964. Recreation facilities on these areas are administered by a local entity, usually the Utah State Park and Recreation Commission. Visits to state park areas nearly doubled from 524,600 in 1960 to just over 1,000,000 in 1965.

No information is available for use of or demand for facilities in urban or urbanized areas. One indication of the problem, however, is the use of recreation facilities on national forest lands within an hour's drive of the larger urban centers. Many of these facilities are overused to an unbelievable degree. Camp and picnic areas are barren by late spring due to trampling. Stream banks are eroded by a perpetual cycle of human traffic. In some instances, hillsides have been fenced to prevent their further destruction by excessive numbers of people. Some experience user turnovers at the rate of three to four each day.

Recreation Demand by Nonresidents: The move is westward. Increasing numbers of people from eastern states are traveling to the open spaces of the west for their leisuretime activities. This annual migration should be an indication to western states that preservation of open space and maintenance of adequate outdoor recreation opportunity is essential. The potential in meeting the demands is still here--in many places it has been lost.

Travel to or through Utah by nonresident persons has increased at tremendous rate. Table 33 shows comparisons in tourist travel for a recent seven-

TABLE 32

Projections of Licensed Resident Hunters
and Fishermen in Utah, 1965-1975 22/

<u>Year</u>	<u>Licensed Fishermen</u>	<u>Licensed Hunters</u>
1965	216,100	178,900
1966	224,500	183,300
1967	233,400	188,000
1968	242,100	192,400
1969	251,300	197,000
1970	260,400	201,500
1971	270,300	206,500
1972	280,100	211,300
1973	290,400	216,300
1974	300,600	221,100
1975	311,200	226,100

TABLE 33

Number of Nonresident Visitors to Utah, 1955-1962 34/

Year	Estimate of Number of Visitors	Percent Increase from Previous Year
1955	3,200,000	
1957	3,900,000	22*
1958	3,850,000	-1
1959	3,950,000	3
1960	4,000,000	1
1961	4,200,000	5
1962	4,500,000	7
TOTAL		41

* Increase for two-year period 1955-1957.

year period. Together with these gross figures it has been noted that visits to national parks and monuments in Utah have been at a rate 40 percent above the national average. 34/ Much of this use is by tourists.

Tabulations are not yet complete, but estimates indicate a 20 percent increase in the rental of automobiles from two rental agencies; a 13 percent increase in business for a Salt Lake City motor tour agency; and increases in visits to national parks and monuments in Utah of from 5 to 90 percent. 35/ These changes involve 1965 statistics as compared to 1964. All these characteristics relate wholly or primarily to increased nonresident activity in the state. Tourism as a whole is estimated to have increased 15 percent during the past year.

Good to excellent fishing has been enjoyed in Utah during recent years. The quality of this activity has begun to attract increasing numbers of non-residents to the state. Big game hunting has been a great attraction to non-resident hunters for several years. Interest, however, appears to be a factor of success and, as big game herds are balanced with available forage and pressures from resident hunters increases, harvest success will begin to taper off. This occurrence will no doubt affect numbers of nonresidents coming to Utah to hunt. There is limited interest by nonresidents in hunting species other than big game. Projections of nonresident fishing and hunting license sales are shown in Table 34.

Three national parks (Zion, Bryce, and Canyonlands), eight national monuments (Arches, Bridges, Capitol Reef, Cedar Breaks, Dinosaur, Hovenweep, Rainbow Bridge and Timpanogos), one national historic site (Golden Spike), one national historic landmark (Alkali Ridge), nine national forests (Ashley, Cache, Caribou, Dixie, Fishlake, Manti-LaSal, Sawtooth, Uinta and Wasatch), three federal migratory waterfowl refuges (Bear River, Ouray, and Fish Springs), five Indian reservations (Navajo, Uintah-Ouray, Goshute, Skull Valley and Shivwits), and two national recreation areas (Glen Canyon and Flaming Gorge) present a great national attraction. National Forest and National Park Service programs are now under expansion in several areas of Utah, which will continue to build the state's attractiveness nationally. Such facilities will be expected to supply a substantial portion of the national demand. There is little doubt, however, that people will come faster than the federal facilities and also that they will require types of facilities not available on federal areas, all of which places greater responsibility on local governments.

The Outdoor Recreation Resources Review Commission estimates a 3.0 hour reduction in the work week; an increase of .8 week in vacation time; and an additional 2.2 holidays between 1960 and 1976. 36/ Additional and improved travel facilities (primarily roads), and increased numbers of passenger automobiles and off-highway vehicles will extend demands for outdoor recreation opportunity by both residents and nonresidents. Thus, in addition to the growing numbers of people visiting the state, they will have more

TABLE 34

PROJECTED NONRESIDENT FISHING AND HUNTINGLICENSE SALES IN UTAH, 1965-1975 33/

Year	Numbers of Licenses	
	Fishing	Hunting
1965	26,300	23,000
1966	29,500	22,500
1967	32,900	22,500
1968	36,800	22,500
1969	41,200	23,000
1970	46,000	23,500
1971	51,400	24,000
1972	57,500	24,500
1973	64,300	25,000
1974	71,900	25,500
1975	80,400	26,000

time and greater ease of travel and access which compound the need for recreation sites and facilities.

Total Demand: Summarization of data in this section is difficult. Nothing is definitive. Demands and trends in demand are apparent, but specific values cannot be developed at this point. Demand determined by using population statistics and participation rates as suggested by the Outdoor Recreation Resources Review Commission appears to be much too conservative for Utah. In nearly every instance, Utahns participate in outdoor recreation activities at a significantly greater rate than the national average, but differences are not consistent.

Lacking a statistical base, demand must be expressed through postulation. Data point out rather vividly that existing demand is not being met. Further, it is not being met by a rather substantial margin. Judgement would dictate that for the twelve activities listed in the survey no more than 60 percent of the demand is being satisfied. This leaves a 40 percent deficit to overcome immediately. A similar, probably greater, proportion of the demand for recreation opportunity within the state's urbanized areas is not being met.

The population of Utah is increasing at the rate of about 2.2 percent per year. The sale of resident fishing licenses increases approximately 2.5 percent per year; boat registrations, 16 percent; activity of ski areas, 12-15 percent; and visits to state and national parks and recreation facilities, about 12 percent. The increase in rate of participation by fishermen and boaters is not known. Figures given relate only the numbers of registered participants.

Considering these rather abstract statistics together with the growing tourist desires, the prospects are not particularly bright for those responsible for providing outdoor recreation opportunity. They would indicate that, in addition to making up present deficiencies, outdoor recreation programs will have to be expanded at the rate of about 10 percent each year. At this, it appears quality will be sacrificed in some instances. 33/ *

To estimate demand, individuals were queried on their desire to take up new activities (Table 35). Sixty percent answered that they would like to participate in additional, new outdoor activities; 34 percent said they did not wish to; and 6 percent gave a no answer. This response shows a fairly sizeable latent demand.

* Tables used in the above text were renumbered for use in this profile.

TABLE 35

New Outdoor Recreation Activities Utah
Residents Want to Begin 33/

Activity	Percent of Survey Sample Expressing Desire *
Boating	22
Skiing (snow)	19
Water Skiing	18
Fishing	17
Camping	16
Golfing	16
Swimming	15
Horseback Riding	14
Picnicking	11
Hunting	11
Driving	10
Hiking	7

* Six percent non-response proportionately distributed between the 60 percent "yes" and 34 percent "no" answers.

Factors subduing these desires give some insight into what future programs should include (Table 36). With increasing leisure and disposable personal income, the two principal reasons for not taking up new activities will gradually become of less significance. Unless something is done in the meantime, emphasis will then shift to "lack of attractive facilities," "opportunity too far away," and "opportunities too hard to find." The fact that one-fifth of all the people who would like to take up some new activity are at least partially prevented from doing so because of inadequate facilities leads one to the inevitable conclusion that additional facilities would be put to immediate use regardless of some of the other problems noted.

Participating respondents listed several improvements which, if made, might encourage their greater participation in outdoor recreation activities (Table 37). Several of the factors can be compared to those given for not taking up new activities; specifically, those relating to improved outdoor recreation facilities and access."33/

4. Minerals

a. General - The following narrative is taken from the publication "Utah's Changing Economic Patterns - 1964" by Elroy Nelson and Osmond L. Harline. It is a good summary of Utah's mineral industry.

"For more than 100 years, the mining industry in Utah has been a major foundation on which the state's economy has been built. Throughout most of the history since 1863, and at least since the coming of the railroads in 1869-70, Utah has ranked among the leading five states in percentage of the state's employment or income derived from mining and processing of minerals. In total value of all mineral production, Utah ranks from twelfth to fourteenth among the 50 states. In variety and balance, as among the metals, the fuels, and other nonmetallics, Utah usually ranks at or near the top. Total value of Utah's mineral production from 1863 through 1963 is estimated at \$8.8 billion.

Growth and demand for the older, familiar metals, development of the newer ones, and demand for industrial minerals and fuels, are expected to provide an even broader base, whether it is the age of the missiles, the computer, or other types of development. 48/

The annual value of mineral production in Utah before 1860 was estimated at less than \$10,000--a small local industry. The total passed \$100,000 (mostly gold and a little silver) by 1867, and \$25 million by 1905. The value exceeded \$100 million in 1917, and again in certain subsequent years up to 1940. The totals exceeded \$200 million during World War II, \$300 million in 1955, and \$400 million in 1960. Subsequent to 1960, value has exceeded \$400 million in each year. Totals for 1963 are shown in Table 38.

TABLE 36

Factors Preventing Participating in 33/
New Outdoor Recreation Activities

Factor	Percent of Respondents Desiring to Begin a New Activity	Percent of Total People in Survey
Lack of time	58	37
Lack of finances	44	28
Lack of equipment	43	27
Lack of attractive facilities	20	13
Opportunity too far away	15	10
Opportunity too hard to get to	10	6
Family not interested	9	6
Health	8	5
Friends not interested	5	3
No transportation	3	2

* It should be noted that hunting was not listed as a possible improvement on the questionnaire. This omission was an oversight and had hunting been included the response to it would no doubt have been significant.

TABLE 37

Improvements which Might Result in Increased
Participation in Outdoor Recreation by Persons
Already Active in these Pursuits ^{33/}

<u>Improvement*</u>	<u>Percent of Sample Making Suggestion</u>
More camping facilities	36
Information about area	36
Access roads	35
Fishing	34
Restroom facilities	33
Campsites	32
Swimming facilities	21
Motels	18
Boating facilities	17
Restaurants	17
Trails	16
Showers	15
Horseback riding facilities	11

* It should be noted that hunting was not listed as a possible improvement on the questionnaire. This omission was an oversight and had hunting been included the response to it would no doubt have been significant.

TABLE 38

Quantity and Value of Utah Mineral Production, 1963 ^{2/}

Minerals - Metallic and Nonmetallic	1963	
	Quantity	Value (\$000)
Carbon dioxide (1,000 cu. ft.)	82,382	6
Clays, including fullers earth (1,000 tons)	199	,415
Copper (tons) ^b	203,140	125,134
Gem stones	(a)	75
Gold (troy ounces) ^b	289,400	10,129
Iron ore (1,000 tons)	1,700	12,023
Lead (tons) ^b	44,130	9,709
Lime (1,000 tons)	153	2,613
Pumice (1,000 tons)	31	36
Salt (1,000 tons)	312	3,350
Sand and gravel (1,000 tons)	16,500	17,300
Silver (1,000 ounces) ^b	4,718	6,035
Stone (1,000 tons)	2,349	4,170
Vanadium (tons)	405	(a)
Uranium ore (1,000 tons)	733	23,568
Zinc (tons) ^b	35,520	8,454
<u>Mineral Fuels</u>		
Coal (1,000 tons)	4,115	(a)
Natural gas (million cu. ft.)	88,800	15,000
Petroleum (1,000 bbls.)	33,700	92,340
Others ^c		70,924
TOTAL VALUE		\$402,206

^a Figures withheld to avoid disclosing confidential data.

^b Recoverable content of ores.

^c Includes values of molybdenum, vanadium, gilsonite, natural gas liquids, cement rock, fluorspar, gypsum, perlite, phosphate rock, and potassium salts.

Source: U. S. Department of Interior, Bureau of Mines; Minerals Yearbook, preliminary releases, January 2, 1964.

Since 1940 there has been a general expansion in production of metals and other minerals. The Utah steel industry was born and industrial minerals were expanded and developed. Uranium came into prominence following World War II. Oil production, begun in 1948, was expanded, beginning in 1956. Phosphates, potash, and other industrial minerals were developed on a major scale in the 1950's, with expansion in the 1960's.

Most of Utah's mineral production enters national--and even worldwide--markets. In 1963 the value of mineral production was reported by the Bureau of Mines at \$402.3 million. As shown in Table 38, the greatest value is in copper, followed by petroleum and then coal. It is the variety of Utah minerals--from the metals to the fuels to the nonmetallics--which also characterizes the state's mining. There are more than 35 major minerals produced in the state. Since 1955 there has been a major upswing in the nonmetallic group added to the metals.

Demand for Minerals. To a great extent, changes in technology continue to make possible the mining and beneficiation of lower grade ores and the removal of greater quantities of overburden from surface mines. These technological advancements are perhaps best illustrated in Utah's huge Kennecott copper mine in Bingham Canyon, where pounds of copper per ton of ore totaled 19.46 in 1940, but only 15.6 in 1962. In addition, tons of waste removed per ton of ore totaled 1.19 in 1940 and 2.45 in 1962. 49/

Also in 1962, for the first time in its history, Kennecott Copper Corporation moved more than 100 million tons of material during a single year's operation at its Bingham Canyon mine. By 1962 the total amount of material, including crude ore and waste, produced from all surface and underground mines in the nation, totaled more than 2.7 billion tons. By 1964 the total was approximately 2.8 billion tons.

Historical Development. Whether or not salt or clays for brickmaking were the first minerals produced in Utah, continues a matter of mild debate. 47/ Subsequent developments included iron ore in Southern Utah, then coal, gold and silver, and later lead and zinc. Production followed arrival of the railroads. Along with discoveries were the developments of processing. Changed use is illustrated in uranium. Until 1942 uranium was a by-product of vanadium production, and its use was in the paint and ceramics industries. Many industrial minerals, such as fluorspar and halloysite, came into production only with the arrival of the steel industry or with major development in oil refining. By 1964 Utah was producing commercially 15 minerals which were either not being recovered in milling or were not being mined as recently as 1947. Until then these minerals had little economic value. In 1964, production from new potash plants began. In 1965, beryllium will become important. After 1966, magnesium and lithium are scheduled for development from the brines of Great Salt Lake and from wells in the Grand County area.

Per Capita Mineral Value. Per capita value of Utah's mineral production exceeds \$400 per year, compared with the national average of \$104. Total value of all mineral production in the nation was listed at \$18.8 billion in 1960 and \$19.2 billion in 1963. Utah's per capita value in 1950 was \$333; in 1955, \$350; and in 1963, above \$400.

Employment and Wages in Mining. Employment in mining in Utah is approximately 4.3 percent of total non-agricultural employment in the state, while nationally, such employment is one percent of the total. However, this includes only mining through milling. Actually, employment in the primary mineral processing, smelting and refining (classified as manufacturing), is considerably greater than that in mining. Approximately one-third of the total manufacturing employment in the state is in the processing of minerals.

Utah ranks fourth among the states in percentage of its labor force employed in mining. Wages paid in this segment of the industry total approximately \$90 million per year.

A "Treasure House". For a number of years Utah has been described as the "Treasure House" of the nation because of its production of a greater variety of minerals than in any other state. Included are copper, iron ore, lead, zinc, gold, and silver, and a long list of nonmetallic minerals. A few of the many known minerals for which economic production has not yet been possible include barite and diatomite, and of great significance, oil shale. Added also are anticipated developments of magnesium and lithium, and the new development of such metals as beryllium.

Utah has many minerals too numerous to name that still offer a challenge for future development. The challenge is to the metallurgist, to the miner, to the economist, to the entrepreneur." 2/

b. Recent Trends in Utah Production - Additional data on minerals is presented in Tables 39, 40, and 41. Production of various minerals for the 5-year period 1958-1963 is given in Table 39. Annual production is rather erratic for most minerals, but some trends are discernable. Iron ore decreased 50% in this period. Lime production doubled. Natural gas increased more than 4-fold, and most of this came from BLM-administered lands. Crude oil production rose 40%. Salt production gained about 70%. Surprisingly, in view of the active highway construction, sand and gravel production dropped substantially. Uranium and vanadium both fell sharply, though long-range production predictions hold them at a steady level for many years. 37/

Utah's Mineral Production, 1958-1963 1/

Mineral	1958			1960			1961			1962			1963		
	Short Tons (Unless Other- wise Stated)	Value (Thou- sands)	Short Tons (Unless Other- wise Stated)	Value (Thou- sands)	Short Tons (Unless Other- wise Stated)	Value (Thou- sands)	Short Tons (Unless Other- wise Stated)	Value (Thou- sands)	Short Tons (Unless Other- wise Stated)	Value (Thou- sands)	Short Tons (Unless Other- wise Stated)	Value (Thou- sands)	Short Tons (Unless Other- wise Stated)	Value (Thou- sands)	Short Tons (Unless Other- wise Stated)
1. Asphalt and related bitumens, native: Gilsonite	317,280	\$ 4,864	383,037	\$ 10,020	(a)	(a)	(a)	(a)	(a)	(a)	(a)	(a)	(a)	(a)	(a)
2. Clays, thousand short tons	157	488	143	416	143	\$ 1,080	174	\$ 1,403	199	1,415	199	1,415	199	1,415	(b)
3. Coal, Thousand short tons	5,328	30,340	4,955	31,458	5,159	31,126	4,297	23,209	4,115	23,209	4,115	23,209	4,115	23,209	(a)
4. Copper (recoverable content of ores, etc.)	189,184	99,511	218,049	139,987	213,534	128,120	218,018	134,299	203,140	134,299	203,140	134,299	203,140	134,299	125,134
5. Fluorspar	16,109	564	1,912	51	610	18	399	12	(a)	12	(a)	12	(a)	12	(a)
6. Gem stones	(b)	40	(b)	72	---	---	---	---	(b)	---	(b)	---	(b)	---	75
7. Gold (recoverable content of ores, etc.) troy ounces	307,824	10,774	368,255	12,889	324,988	12,005	311,924	10,917	289,400	10,917	289,400	10,917	289,400	10,917	10,129
8. Iron ore (usable), thousand long tons, gross weight	3,514	25,202	3,334	23,862	3,533	25,493	2,630	18,242	1,700	18,242	1,700	18,242	1,700	18,242	12,023
9. Lead (recoverable content of ores, etc.)	40,355	9,443	39,398	9,219	40,894	8,424	38,199	7,029	44,130	7,029	44,130	7,029	44,130	7,029	9,709
10. Lime, thousand short tons	80	1,513	127	2,672	142	2,626	163	2,759	153	2,759	153	2,759	153	2,759	2,613
11. Manganese ore and concentrate (35 per cent or more Mn.) gross weight	1,043	84	---	---	---	---	---	---	(b)	---	(b)	---	(b)	---	(b)
12. Mica (sheet) pounds	12	(a)	51,040	9,187	57,175	8,976	74,128	12,454	(b)	---	(b)	---	(b)	---	(b)
13. Natural gas, million cubic feet	19,247	2,829	---	---	---	---	---	---	(b)	---	(b)	---	(b)	---	(b)
14. Natural gasoline, thousand gallons	240	15	---	---	---	---	---	---	(b)	---	(b)	---	(b)	---	(b)
15. Petroleum (crude) thousand 42-gallon barrels	24,386	72,914 ^c	37,559 ^c	103,021	33,118	91,075	30,964	84,841	33,700	84,841	33,700	84,841	33,700	84,841	92,340
16. Phosphate rock, thousand long tons	(a)	(a)	---	---	---	---	---	---	(a)	---	(a)	---	(a)	---	(a)
17. Pumice, thousand short tons	41	84	60	134	60	95	28	46	31	46	31	46	31	46	36
18. Salt (sodium chloride), thousand short tons	184	2,275	231	3,092	249	3,187	311	3,349	312	3,349	312	3,349	312	3,349	350
19. Sand and gravel, thousand short tons	25,304	14,379	6,848	6,182	18,325	16,979	19,941	20,954	16,500	20,954	16,500	20,954	16,500	20,954	17,300
20. Silver (recoverable content of ore, etc.) thousand troy ounces	5,278	4,777	4,783	4,329	4,798	4,435	4,628	5,022	4,718	5,022	4,718	5,022	4,718	5,022	6,035
21. Stone, thousand short tons	13,126	13,949	1,837	3,087	1,808	3,219	2,118	3,865	2,349	3,865	2,349	3,865	2,349	3,865	4,170
22. Uranium ore	1,239,767	38,583	1,089,757	27,843	1,098,783	25,734	781,955	23,653	733,000	23,653	733,000	23,653	733,000	23,653	25,568
23. Vanadium, thousand pounds	752	(a)	462	(a)	514	(a)	525	(a)	405	(a)	405	(a)	405	(a)	405
24. Zinc (recoverable content of ores, etc.)	44,982	9,176	35,476	9,153	37,239	8,565	34,313	7,892	35,520	7,892	35,520	7,892	35,520	7,892	8,454
25. Value of items that cannot be disclosed ^d	---	25,219	---	36,047	---	45,554	---	50,382	---	50,382	---	50,382	---	50,382	70,924

^aWithheld to avoid disclosure; value included in "Items that cannot be disclosed."^bInformation not available.^cPreliminary.^dArsenious oxide (1940, 1945); barite (1959-1962); bismuth (1940, 1945); bituminous sandstone (1950); cement (1945, 1958-1963); coke (1945); clay (kaoline) (1958-1963); gypsum (1958-1963); halloysite (1958); mercury (1940); molybdenum, (1950, 1958-1963); perlite (1958-1963); potassium salts (1958-1963); pyrites (1959, 1960); and values indicated by footnote (a).

Source: U. S. Bureau of Mines, Minerals Yearbook and Mineral Industry Surveys.

TABLE 40

VALUE OF MINERAL PRODUCTS OF UTAH AND THE UNITED STATES, 1905 - 1963^a 1/

Year	Utah (\$1,000)	Per Cent Utah is of U. S.	United States (\$1,000)	Year	Utah (\$1,000)	Per Cent Utah is of U. S.	United States (\$1,000)
1905	\$ 28,448	1.75	\$1,623,765	1935	\$ 41,754	1.42	\$ 2,942,000
1906	34,999	1.84	1,900,880	1936	60,995	1.69	3,606,000
1907	38,100	1.84	2,069,570	1937	105,087	2.46	4,265,000
1908	26,422	1.66	1,591,773	1938	58,319	1.66	3,518,000
1909	35,280	1.87	1,887,107	1939	79,291	2.08	3,808,000
1910	39,234	1.97	1,987,844	1940	103,606	2.47	4,198,000
1911	43,774	2.28	1,924,081	1941	121,458	2.38	5,107,000
1912	51,005	2.28	2,237,794	1942	146,062	2.60	5,623,000
1913	53,607	2.20	2,433,545	1943	163,155	2.75	5,931,000
1914	45,636	2.16	2,111,172	1944	147,878	2.34	6,310,000
1915	62,586	2.61	2,394,644	1945	127,537	2.05	6,231,000
1916	99,734	2.84	3,508,439	1946	95,520	1.35	7,062,000
1917	113,434	2.28	4,992,496	1947	206,015	2.14	9,610,000
1918	105,786	1.91	5,540,708	1948	204,459	1.67	12,273,000
1919	64,166	1.39	4,623,770	1949	177,825	1.11	10,580,000
1920	76,537	1.10	6,981,340	1950	229,956	1.94	11,862,000
1921	40,596	0.98	4,138,500	1951	257,144	1.90	13,529,000
1922	60,697	1.31	4,647,290	1952	265,501	1.98	13,396,000
1923	86,221	1.44	5,986,500	1953	298,629	2.07	14,418,000
1924	84,357	1.59	5,305,800	1954	255,495	1.82	14,067,000
1925	99,910	2.08	4,812,000	1955	331,929 ^b	2.10	15,792,000
1926	98,753	1.86	5,311,000	1956	399,759	2.30	17,365,000
1927	90,053	1.92	4,698,000	1957	359,335	1.98	18,113,000
1928	97,211	2.17	4,484,000	1958	367,232	2.22	16,529,000
1929	114,825	2.34	4,908,000	1959	373,515	2.18	17,241,000
1930	63,982	1.61	3,980,000	1960	431,383	2.41	17,896,000
1931	40,146	1.56	2,578,000	1961	406,617	2.24	18,131,000
1932	22,443	1.12	2,000,000	1962	410,590 ^c	(d)	(d)
1933	24,056	1.17	2,050,000	1963	402,281 ^c	(d)	(d)
1934	32,093	1.17	2,744,000				

^aThe United States figures from 1925 - 1963 are a revised series and are not strictly comparable with data prior to 1925. The revised series represents value of domestic primary products only and excludes products made from scraps and mineral products made from material of foreign origin which are included in the 1905 - 1924 data.

^bFigure excludes uranium; value of uranium for 1955 was not released by the Atomic Energy Commission.

^cPreliminary.

^dInformation not available.

Source: U. S. Geological Survey, Mineral Resources of the U. S.

U. S. Bureau of Mines, Minerals Yearbooks, and Mineral Industry Surveys.

VALUE OF MINERAL PRODUCTION IN UTAH BY COUNTIES
1951 - 1962

County	1951	1952	1953	1954	1955	1956	1957	1958	1959	1960	1961	1962
	(Thousands of Dollars)											
Beaver	\$ 122	\$ 212	\$ 58	\$ 29	\$ 23	\$ 148	\$ 180	\$ 57	\$ 122	\$ 156	\$ 217	\$ 135
Box Elder	186	111	393	265	181	775	16,301	21,055	2,352	607	1,208	1,125
Cache	133	272	388	290	385	450	987	436	429	513	558	690
Carbon	22,397	23,775	27,697	23,016	32,266	28,973	34,844	25,840	23,699	25,903	25,721	18,776
Daggett	246	225	16	---	9	211	295	471	506	1,129	1,192	1,440
Davis	86	130	343	318	405	485	268	366	269	293	381	3,086
Duchesne	1,910 ^b	1,786	267	124	69	40	14	29	80	443	27	272
Emery	9,726	7,996	9,484	6,397	7,291	9,529	8,483	7,051	7,114	8,784	8,626	6,081
Garfield	---	9	7	(a)	58	274	207	132	184	176	216	224
Grand	29	39	30	23	31	708	837	1,330	1,237	1,177	1,422	2,628
Iron	10,290	15,168	26,567	19,563	24,884	27,785	30,651	25,363	20,404	24,141	(a)	18,480
Juab	5,120	4,244	3,766	4,974	4,542	3,822	2,600	1,991	1,645	1,546	1,238	1,498
Kane	52	30	79	76	8	36	22	245	7	8	(a)	9,125
Millard	10	32	109	95	125	386	185	78	113	150	124	235
Morgan	4,506	3,057	3,540	4,565	6,246	6,915	6,482	6,966	7,523	7,118	7,626	(a)
Piute	---	15	8	7	105	708	(a)	(a)	172	313	(a)	(a)
Rich	3	(a)	(a)	(a)	775	776	776	(a)	1,100	2,235	1,914	2,380
Salt Lake	182,054	191,701	206,471	172,655	226,645	269,428	194,608	144,335	127,593	188,508	177,209	182,186
San Juan	12	5	57	1	369	22,278	33,211	98,255	139,386	121,938	106,781	102,790
Sanpete	67	34	42	44	54	125	174	322	170	138	145	175
Sevier	1,051	1,110	1,220	1,136	1,290	1,106	1,068	1,206	1,366	1,334	1,291	1,328
Summit	6,024	3,377	932	1,567	1,220	5,570	4,796	4,000	3,585	4,757	1,640	3,888
Tooele	4,989	3,978	4,391	4,235	3,697	4,147	4,420	4,305	4,046	6,096	6,997	8,512
Uintah	(b)	---	(a)	4,416	4,776	4,108	10,783	16,265	23,799	26,879	28,086	33,151
Utah	947	800	1,068	1,376	1,849	2,576	2,384	1,776	1,531	1,928	1,474	2,274
Wasatch	3,752	3,214	3,729	3,704	7,735	2,956	2,801	2,258	1,887	2,440	5,237	1,039
Washington	11	7	86	85	159	144	170	138	63	93	226	100
Wayne	---	---	---	1	---	31	(a)	20	29	6	137	(a)
Weber	89	81	205	308	262	305	381	178	569	586	552	(a)
Undistributed	3,333	4,093	7,798	6,786	8,299	6,139	2,404	2,556	3,068	3,330	28,113	8,792
State Total	257,145	265,501	298,629	255,495	331,929	399,759	359,335	365,960	373,017	431,396	406,617	410,412

Note: More detailed information available in the Utah Mining Association's publication, Utah Mining Industry.

^a Figure withheld to avoid disclosing individual company. Confidential data included with "Undistributed."

^b "Duchesne" figure includes "Uintah" in order to avoid disclosing individual company data.

Source: U. S. Bureau of Mines, Minerals Yearbooks.

c. National Importance of Utah Minerals - For perspective on the national importance of Utah mineral production, refer to Table 40. 37 & 38/ Utah's production has never been more than 2.75% of the total value of minerals produced during any year in the United States. Though the absolute value of Utah production has risen from about 28 million dollars in 1905 to a high of 431 million dollars in 1960, there has been no significant increase in Utah's percent of the U. S. total.

d. County Mineral Production. County figures on the value of mineral production (Table 41) are good indicators of the location of valuable mineral deposits. Salt Lake County, with its valuable copper mines, is far ahead of the other counties. San Juan, Uintah, and Duchesne Counties, sites of recent petroleum discoveries, are also high-value areas. The decline of coal production in Carbon and Emery Counties is seen through the drop in values. 37/

Illustrations 5, 6, 7, and 8 are excellent indicators of mineral deposit locations in Utah counties. 2/ The general locations of metals, non-metallic minerals, solid hydrocarbons, and oil and gas fields are shown in these figures. These maps serve as quick references to mineralized areas in Utah.

e. Production of Leasable Minerals from BLM Administered Lands in Utah - Tables 42 and 43 provide interesting data about minerals which are leasable from BLM in Utah. To some degree they reflect the thinking of the mineral industry about future demands for mineral products.

This is especially true for coal. Note that even though 1965 coal production was only 67% of the 1956 production, acres under lease have increased $2\frac{1}{2}$ times. This reflects industry belief that future demand for coal will increase, even in the face of falling present demand.

Technology and research are playing a heavy role in developing a better future for the coal industry. If a more competitive means of breaking coal into liquid products can be developed, new life will flow into the industry. The existing processes for this operation make these products competitive with domestic petroleum, but not with imported petroleum. A change in import policies, therefore, would also affect coal production and the acres of land under lease. Coal leasing also increased in 1965 because the acreage limitation was increased from 10,240 to 46,080 acres, and many firms increased their existing holdings.

Utah's oil and gas production has risen rather vigorously the past 10 years. Leasing, however, reached a peak in 1960 and has since declined. This resulted because intensive exploratory activity in the late 1950's pretty well defined locations of the best petroleum deposits. Companies have since dropped many leases on lands not considered to be productive and have concentrated on producing gas and oil from the better lands.

2. National Importance of Utah Minerals - For perspective on the national importance of Utah mineral production, refer to Table A-1. Utah's production has never been more than 2.5% of the total value of minerals produced in the United States. Through the years, the value of Utah's production has risen from about \$2 million in 1900 to a high of \$11 million in 1960. There has been no significant increase in Utah's percent of the U.S. total.

3. County Mineral Production. County figures on the value of mineral production (Table A-2) are good indicators of the location of various mineral deposits. Salt Lake County, with its valuable copper mines, is ahead of the other counties. San Juan, Uinta, and Garfield counties, with their natural gas discoveries, are also high-value areas. The location of coal production in Carbon and Emery counties is also shown in the values.

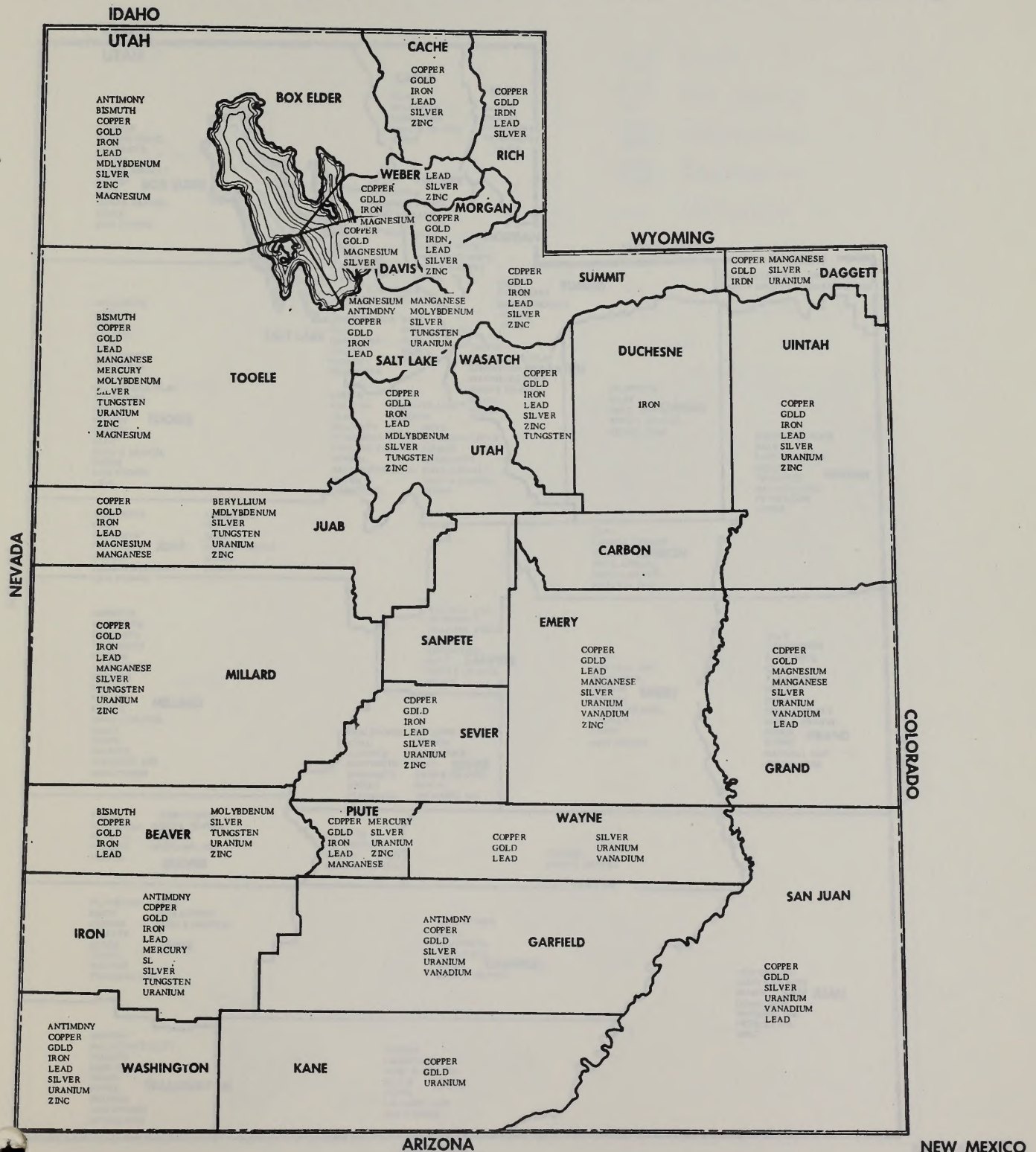
Illustrations 2, 3, 4, and 5 are excellent indicators of mineral deposits in Utah counties. The general location of various non-metallic minerals, such as gypsum, and oil and gas fields are shown in these figures. These maps serve as quick references to mineralized areas in the State.

4. Production of Potash. Potash is the second highest value mineral produced in Utah. Table A-3 provides interesting data about potash which are valuable from 1900 to 1960. In some ways, the history of the mineral industry about potash demands for more of a study. This is especially true for coal. Note that even though 1960 coal production was only 5% of the 1935 production, more mines have increased in size. This reflects industry belief that future demand for coal will increase, even in the face of falling present demand.

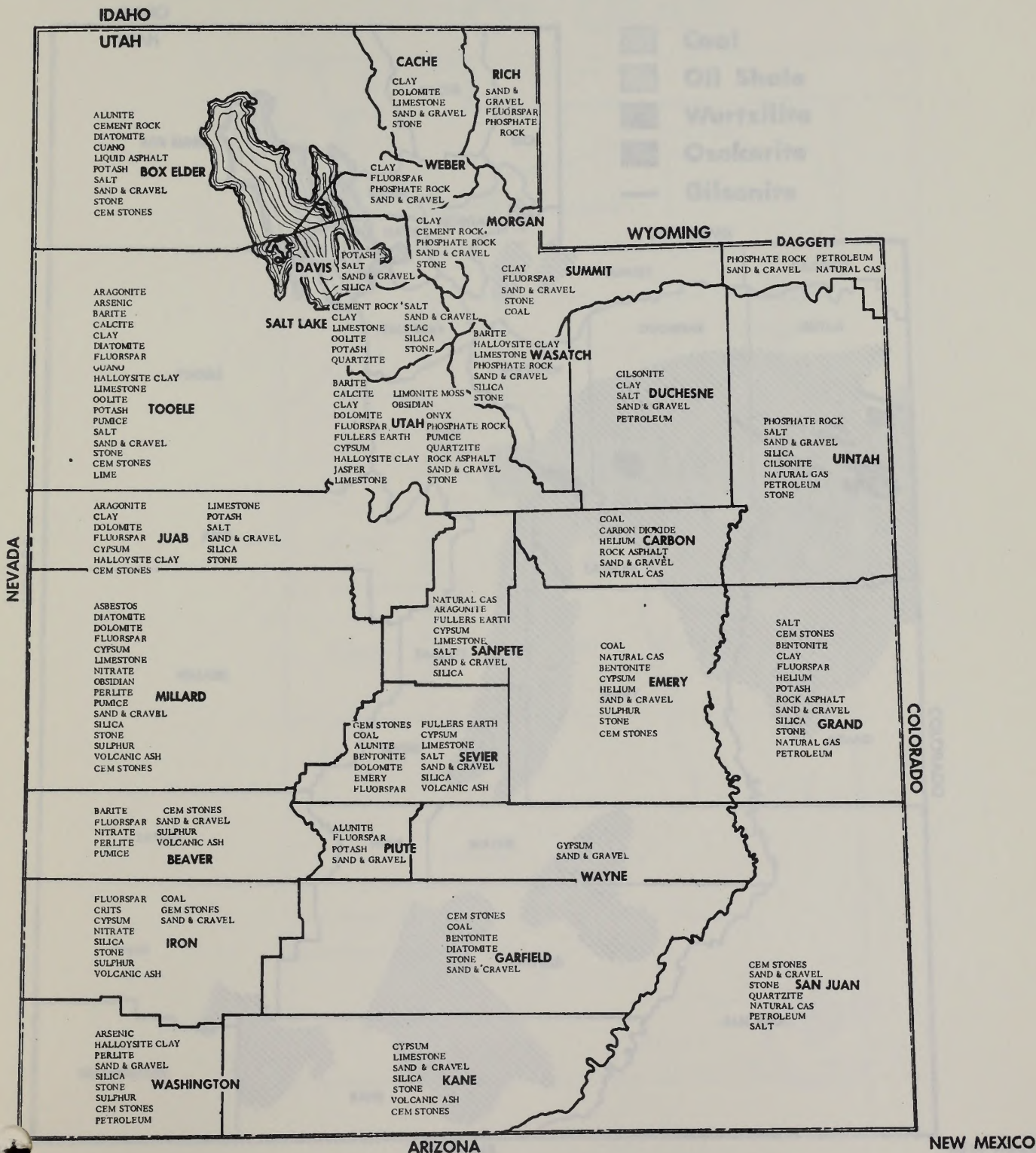
Technology and research are playing a heavy role in development of better mines for the coal industry. If a more competitive means of producing coal into liquid products can be developed, new life will flow into the industry. The existing processes for this operation make more potash available with economic petroleum, but now with improved technology, a more efficient process is being developed. Coal production and the amount of land under lease. Coal leasing also increased in 1960 because the average leasehold was increased from 10,000 to 25,000 acres, and many leases increased their mineral holdings.

Utah's oil and gas production has risen rather dramatically the last 10 years. Leasing, however, reached a peak in 1950 and has since declined. This resulted because intensive exploratory activity in the late 1940's greatly well defined locations of the best petroleum deposits. Companies have since dropped many leases on lands not considered to be productive and have concentrated on producing gas and oil from the better lands.

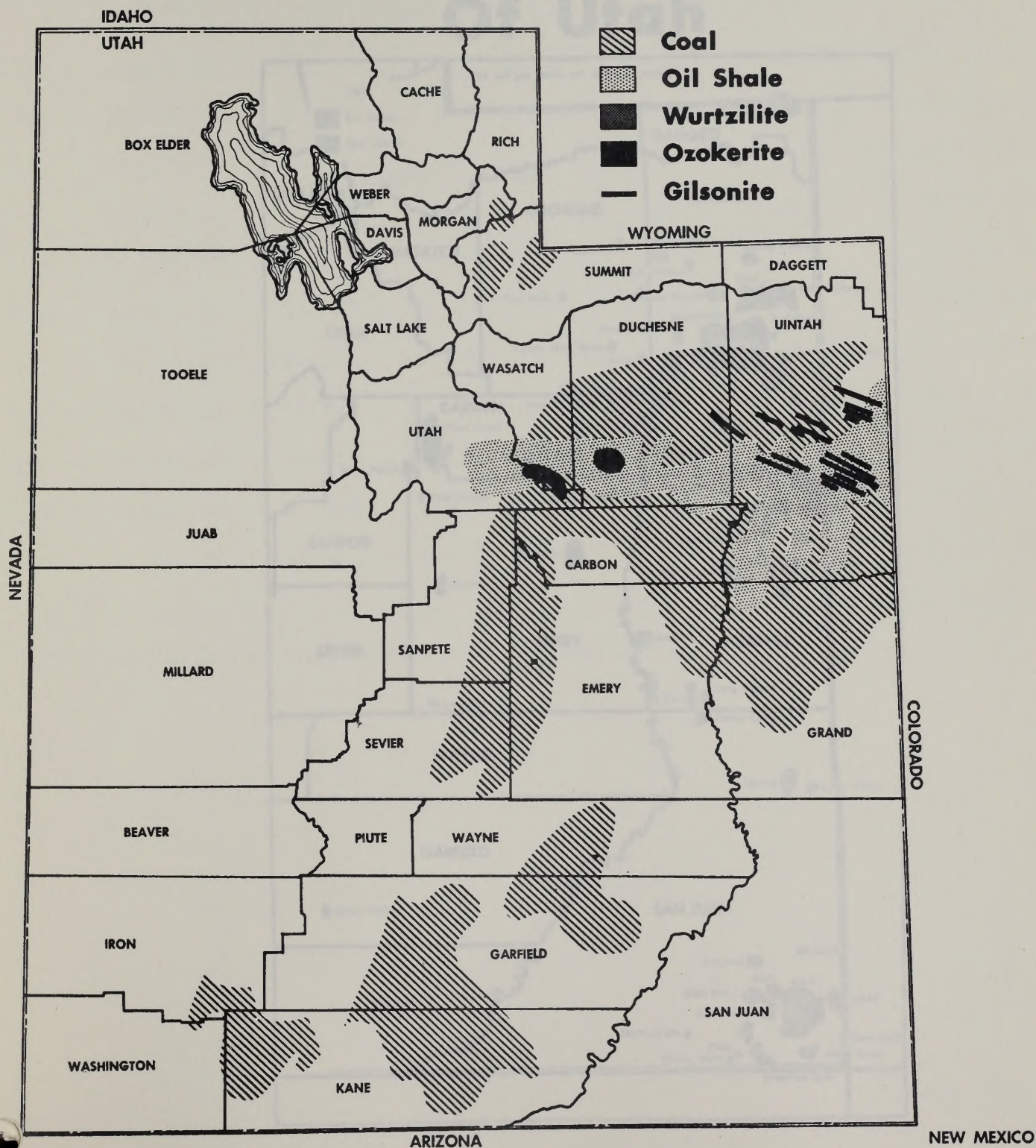
Metals Of Utah 2/



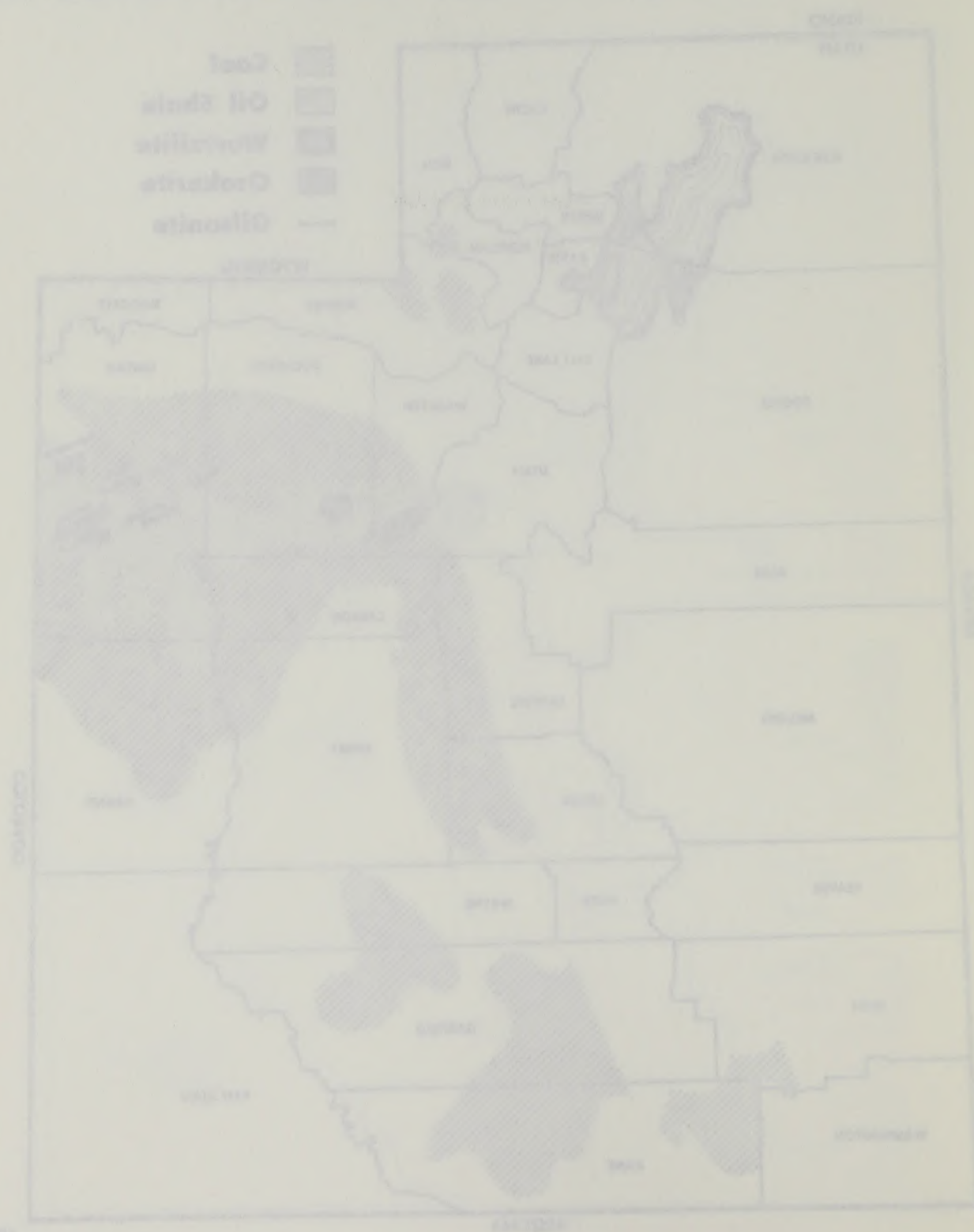
Non - Metallic Minerals Of Utah ^{2/}



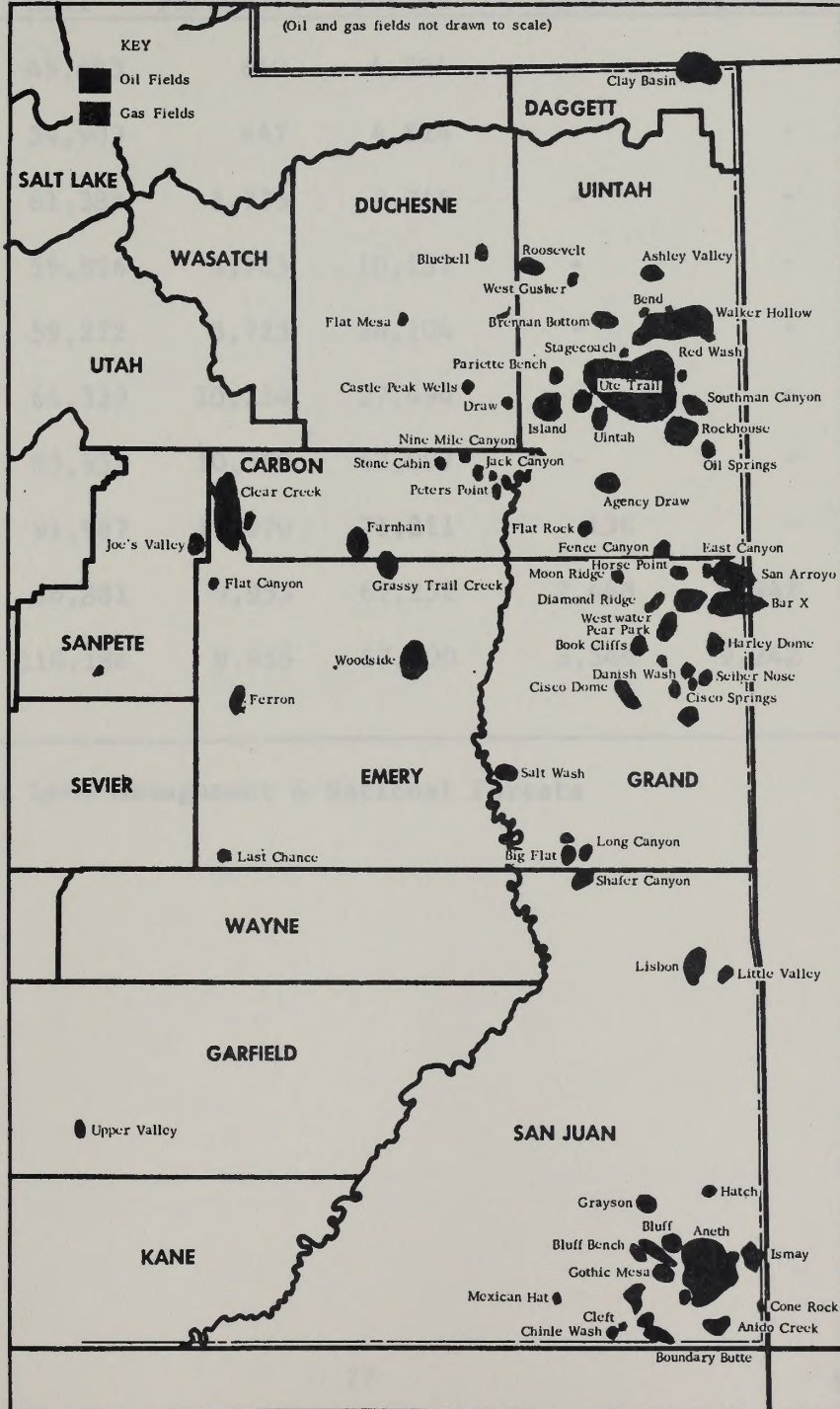
Solid Hydrocarbons Of Utah 2/



Solid Hydrocarbons Of Utah



Oil and Gas Fields ^{2/} Of Utah



Oil and Gas Fields of Utah



TABLE 42

Mineral Leases on Utah's Public Lands (Acres)* 15/

1956 - 1965

Type of Mineral

Year	Oil & Gas	Coal	Phosphate	Potash	Gilsonite	Bitum. Sands	Total
1956	13,198,646	45,883	640	4,824	-	-	13,249,993
1957	14,918,746	54,903	847	4,824	-	-	14,979,320
1958	16,247,165	61,388	3,723	7,745	-	-	16,320,021
1959	17,232,973	59,826	3,723	10,151	-	-	17,306,673
1960	18,134,561	59,272	3,723	24,104	-	-	18,221,660
1961	17,714,492	64,339	10,254	27,494	-	-	17,816,579
1962	16,469,133	83,952	10,599	43,097	-	-	16,606,781
1963	13,323,335	91,987	11,970	71,811	136	-	13,499,239
1964	11,862,061	96,881	9,955	67,252	2,468	9,942	12,047,859
1965	11,144,791	116,186	9,955	67,800	3,546	9,242	11,351,520

* Includes Bureau of Land Management & National Forests

TABLE 12

Mineral Leases on Alaska's Public Lands (Continued)

1950 - 1952

Type of Mineral

Year	Oil & Gas	Coal	Phosphate	Soluble Borate	Claystone	Other	Total
1952	13,108,000	64,882	800	6,824	-	-	13,179,706
1951	14,918,100	70,901	847	4,524	-	-	15,693,472
1950	16,267,152	61,868	3,723	7,762	-	-	16,339,705
1949	17,432,913	20,434	3,723	10,151	-	-	17,467,221
1948	18,134,301	24,512	3,723	24,104	-	-	18,186,640
1947	15,716,402	64,329	10,224	17,424	-	-	15,808,379
1946	16,469,133	83,825	10,224	42,075	-	-	16,605,257
1945	12,323,337	81,981	11,970	17,811	136	-	12,435,235
1944	11,862,031	38,201	9,922	67,222	2,468	9,942	11,982,786
1943	11,146,791	116,700	9,922	67,800	3,240	9,242	11,343,755

* Includes Bureau of Land Management's Estimated Reserves

TABLE 43

Production of Minerals From Utah's Public Lands* 15/

1956 - 1965

Type of Mineral

Year	<u>Type of Mineral</u>				
	Petroleum (Barrels)	Natural Gas (M Cu. Ft.)	Liquid Petroleum Products (Gallons)	CO ₂ (M. Cu. Ft.)	Coal (Short tons)
1956	1,296,146	10,403,017	-	-	2,875,133
1957	1,197,068	10,098,089	-	-	2,957,352
1958	1,264,666	13,217,385	-	-	2,701,657
1959	4,715,921	11,780,522	115,766	90,447	2,515,634
1960	5,949,312	12,917,077	5,376,075	69,625	2,532,424
1961	6,026,546	14,801,889	6,011,760	60,425	2,492,385
1962	5,793,970	17,131,181	8,809,649	78,136	2,722,644
1963	6,921,282	18,686,049	9,949,371	81,920	2,021,460
1964	9,499,892	28,712,022	8,266,625	100,905	2,176,830
1965	10,532,879	27,059,195	7,659,116	96,432	1,935,000

Type of Mineral

Year	<u>Type of Mineral</u>				
	Fill Dirt (Cu. Yds.)	Rock (Tons)	Sand & Gravel (Cu. Yds.)	Top Soil (Cu. Yds.)	Gilsonite (Short tons)
1956	500	-	-	-	-
1957	10,000,360	50	128,000	-	-
1958	4,350	-	16,500	-	-
**1959					-
1960	8,000	-	8,630	-	-
1961		121,000	14,000	200	-
1962	2,770	5	1,711,202	6,076	-
1963	98,250	147	3,350,100	20	720
1964	108,360	15,300	1,851,135	2,260	1,128
1965	1,745,000	218,400	2,801,736	405	4,450

* Includes Bureau of Land Management & National Forests

** Data Not Available

5. Transportation

a. General - "Transportation plays a larger role in Utah's economy than is true in most states of the nation. Among the reasons are (1) the types of goods produced in Utah for local and national needs, (2) distances to places where Utah-produced goods are marketed, and (3) distances from places producing goods to be marketed in or from points in Utah.

Because of her location with respect to other states in the Intermountain Region, Utah is an important distribution point. To some extent, it is also a bridge over which considerable traffic moves from east to west.

Although data classified in detail are not readily available, transportation and the utilities make up somewhat more than 8.2 percent of total personal income received in Utah. This is considerably higher than the national average of 7.5 percent. Transportation industries include rail, bus, and motor passenger facilities, trucking and warehousing, airlines, and petroleum and gas pipelines.

The transportation and warehouse industries in Utah are represented by a total of 523 reporting units, provide employment for almost 13,000 each year, and pay wages in excess of \$87 million."2/

Table 44 is shown so that the economic importance of various segments in Utah's transportation industry can be identified. Railroads and trucking are far ahead in terms of wages paid, but this does not diminish the importance of other means of transporting products across the state. Pipelines, for example, are a vital asset to the oil and gas industry even though they do not contribute much to the economy in the form of wages.

b. Transportation Across Public Lands - In the next five to ten years most of Utah's highway construction efforts will be pointed toward rural areas. When Interstate highway construction began in Utah in 1958 or 1959 the state government built the first highways in urban areas along the Wasatch Front. That system is now nearly complete. The next phase calls for building the Interstate in rural areas, and it is believed that this will be completed by 1973 or 1974.

Three counties (Iron, Sevier, and Garfield) are scheduled for highway construction in the near future. These highways will be I-15 near Cedar City, I-70 from Fremont Junction to the Emery County line, and U-95 between Hanksville and Blanding. Other highway construction or improvement projects are underway near Bryce Canyon National Park, from Trachyte Junction to Bullfrog Basin, Mt. Carmel Junction to Coal Hill, and Alton Junction to Shingle Creek (Kane County, and Panguitch to Circleville Canyon (Garfield County). 16/

The purpose of this study is to investigate the effects of the proposed changes on the system. The study is divided into two main parts: (1) a description of the current system and (2) a description of the proposed changes. The current system is a simple system with a few basic functions. The proposed changes are designed to improve the system's performance and add new features. The study will evaluate the effectiveness of these changes and provide recommendations for further improvements.

The study is organized as follows. Chapter 1 provides an overview of the system and the proposed changes. Chapter 2 describes the current system in detail, including its architecture, components, and data flow. Chapter 3 describes the proposed changes, including the new features and the modifications to the existing components. Chapter 4 presents the results of the study, including the performance metrics and the user feedback. Chapter 5 provides conclusions and recommendations for future work.

The study is based on a combination of qualitative and quantitative data. Qualitative data is collected through interviews with system users and experts. Quantitative data is collected through performance tests and user surveys. The data is analyzed using statistical methods to identify trends and patterns.

The study is limited by several factors. First, the study is based on a small sample of users and experts. Second, the study is based on a single point in time. Third, the study is based on a specific set of conditions. Despite these limitations, the study provides valuable insights into the effects of the proposed changes on the system.

The study is organized into five chapters. Chapter 1 is the introduction, which provides an overview of the system and the proposed changes. Chapter 2 is the current system, which describes the system's architecture, components, and data flow. Chapter 3 is the proposed changes, which describes the new features and the modifications to the existing components. Chapter 4 is the results, which presents the performance metrics and the user feedback. Chapter 5 is the conclusions and recommendations, which provides insights into the effects of the proposed changes on the system.

The study is based on a combination of qualitative and quantitative data. Qualitative data is collected through interviews with system users and experts. Quantitative data is collected through performance tests and user surveys. The data is analyzed using statistical methods to identify trends and patterns. The study provides valuable insights into the effects of the proposed changes on the system and provides recommendations for further improvements.

TABLE 44

Number of Companies, Employment, and Wages
Paid in Transportation Industries in Utah, 1963 ^{2/}

<u>Transportation Industry</u>	<u>Number of Reporting Units</u>	<u>Employment</u>	<u>Annual Wages Paid (\$ million)</u>
Railroads	60	6,267	45.
Buses *	32	981	4.6
Motor Freight & Warehousing	329	4,779	30.6
Air Transportation	36	738	4.9
Pipelines	27	169	1.
Transportation Services	<u>39</u>	<u>334</u>	<u>1.7</u>
TOTAL	523	12,968	87.8

* Taxis, local passenger buses, intercity and major bus lines. Does not include school buses or private carriers.

Source - Utah State Dept. of Employment Security, preliminary data from the Annual Report, 1963.

TABLE 24

Report of Department, Employment, and Wages
Paid in Transportation Industries in 1945, 1946

Transportation Industry	Number of Employing Units	Employment	Annual Wages Paid (\$ mil.)
Railroads	50	8,563	67.4
Trucking	45	981	4.2
Motor Freight & Warehousing	219	4,178	30.6
Air Transportation	10	138	4.9
Shipping	25	120	1.1
Transportation Services	30	134	4.7
TOTAL	359	15,005	112.9

* Includes local passenger buses, industry and major bus lines. Does not include school buses or private carriers.

Source - Utah State Dept. of Employment Security, preliminary data from the Annual Report, 1947.

Utah's congressional delegation, led by Senator Moss, is pushing for funds to build roads in undeveloped public land areas. Purpose of the roads would be to open up the state's major outdoor recreation and tourist areas. Kane, Garfield, and Wayne Counties would benefit most from these funds.

Utah tourism should be enhanced greatly by improved highways. Most of the highways will open new areas to the traveler or to improve present roads. All these efforts will increase substantially the recreational use and value of BLM-administered lands. As tourism increases, BLM will have to give even more consideration to the scenic attributes of public lands and will have to restrict or manage other uses and resources so that the landscape and natural beauty is preserved.

In many areas, federal, state, and county governments rely heavily upon BLM-administered lands for highway rights-of-way. These are granted without charge although BLM imposes restrictions to insure that roads are not built at needless expense of the resources. Mineral lessees may also build roads free of charge to gain access to lands they lease from the federal government.

Illustrations 9 and 10 show how Utah's interstate and federal aid interstate highway systems will extend through the state. Many miles of these systems will cross public lands. Table 45 lists mileages of different road types for each county. The listing includes only state and local roads. Many "rural" counties where there is substantial BLM acreage, such as Millard, Uintah, Box Elder, Duchesne, and San Juan, have large road mileages.

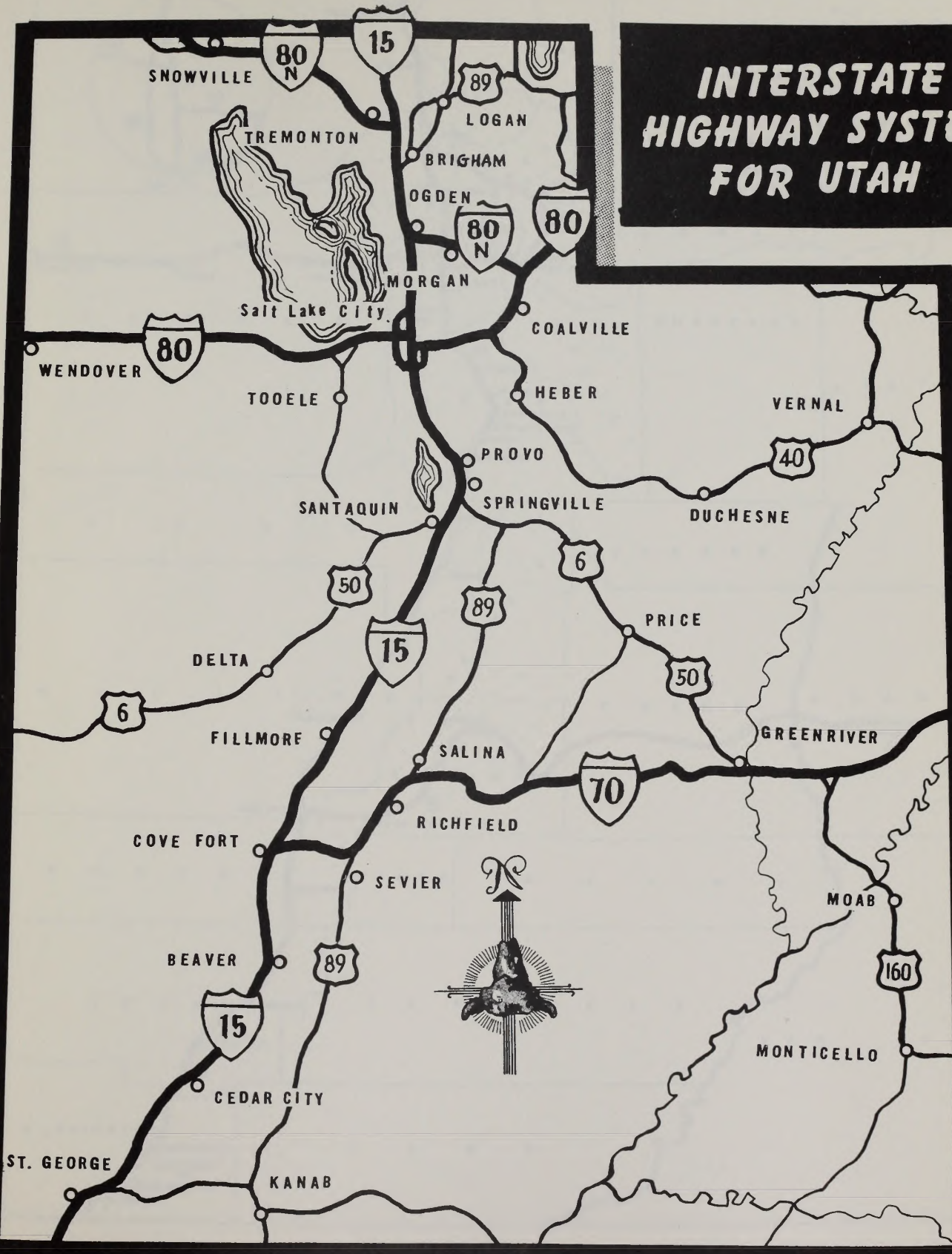
Air transportation routes are depicted in Illustration 11. Only three BLM district headquarters are serviced by commercial air routes, but all district headquarters are located near municipal airports. Some districts also have many airstrips located in remote areas. These airstrips were mostly built by oil and gas companies, and have proved valuable for transporting firefighters, and for other uses.

Railroads are not widespread through Utah, as seen in Illustration 12. Livestock and other public land products are therefore transported largely by truck. Construction of a railroad connecting Vernal with several other points has been proposed several times to transport forest, mining, and livestock products, but has never materialized.

The economic impact of Utah's public lands on highway construction programs in the state has been analyzed as follows:

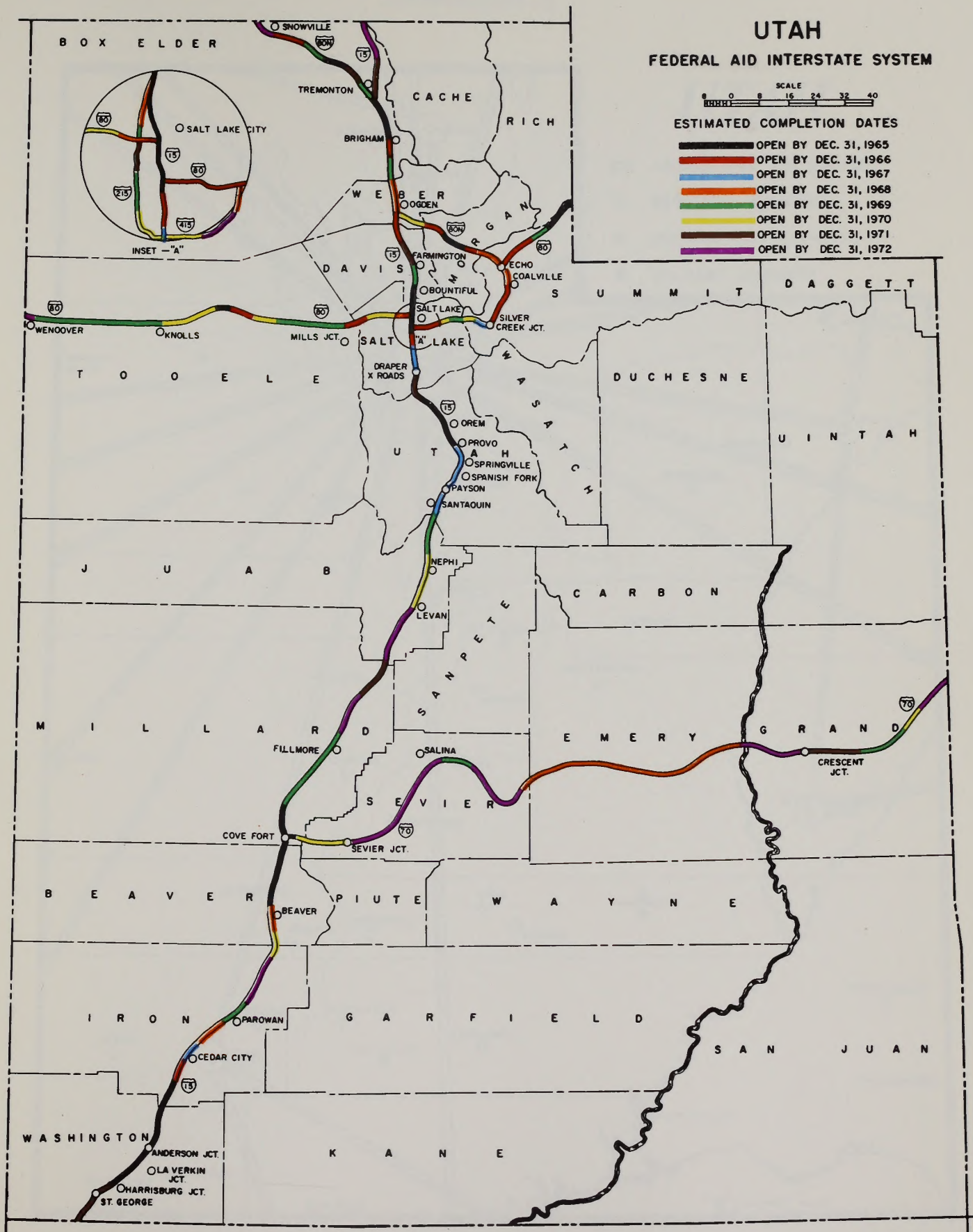
"Rather than having to match federal A-B-C highway funds on a 50-50 basis, as do states without public domain, Utah has a ratio of only 22.66% state matching funds to 77.34% federal funds. Utah's estimated annual apportion-

INTERSTATE HIGHWAY SYSTEM FOR UTAH



Information and Education Division

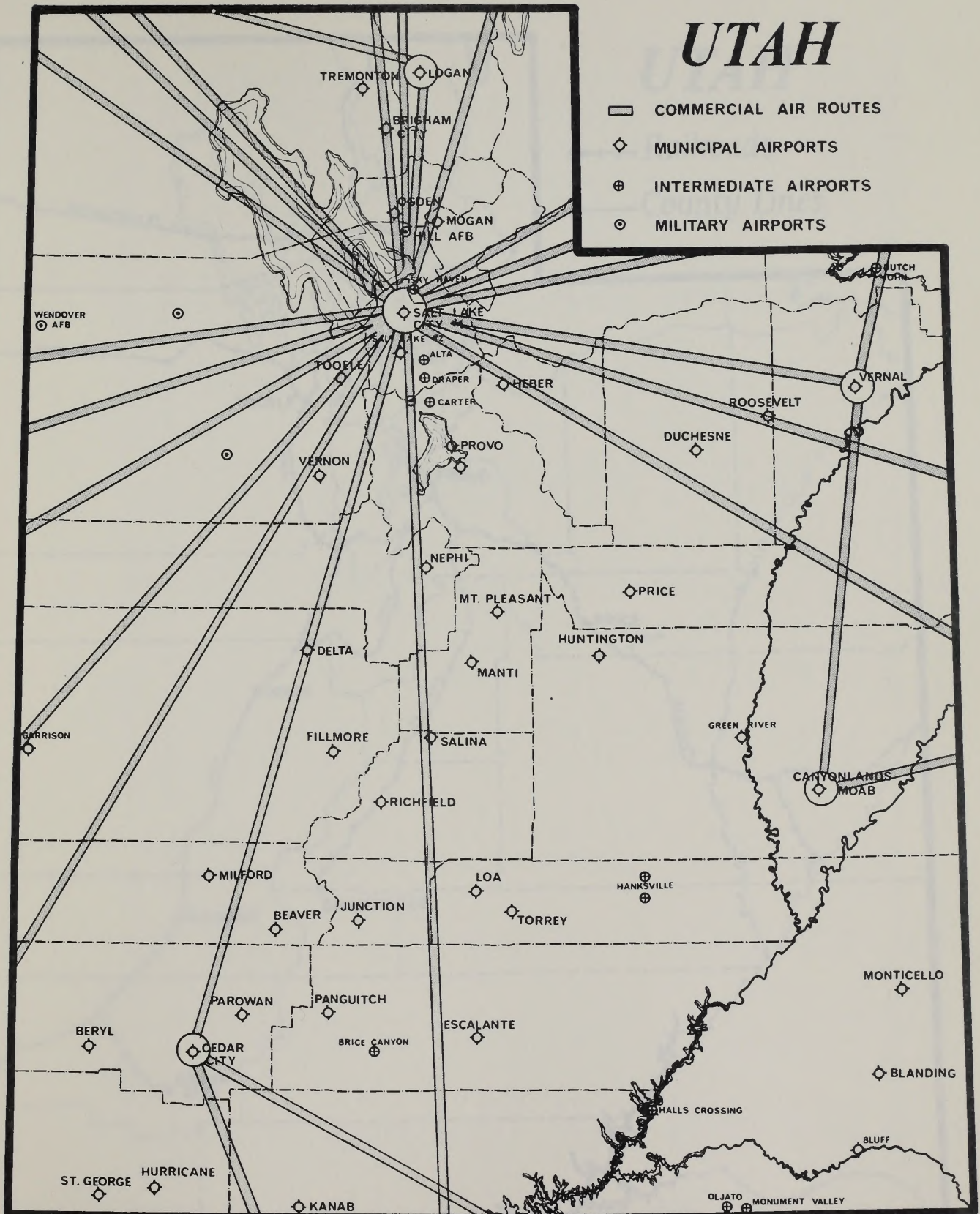
UTAH STATE DEPARTMENT
OF HIGHWAYS



This map furnished by Utah State Dept. of Highways

UTAH

- COMMERCIAL AIR ROUTES
- ◇ MUNICIPAL AIRPORTS
- ⊕ INTERMEDIATE AIRPORTS
- ⊙ MILITARY AIRPORTS



Airports and Major Air Routes in Utah. 22/

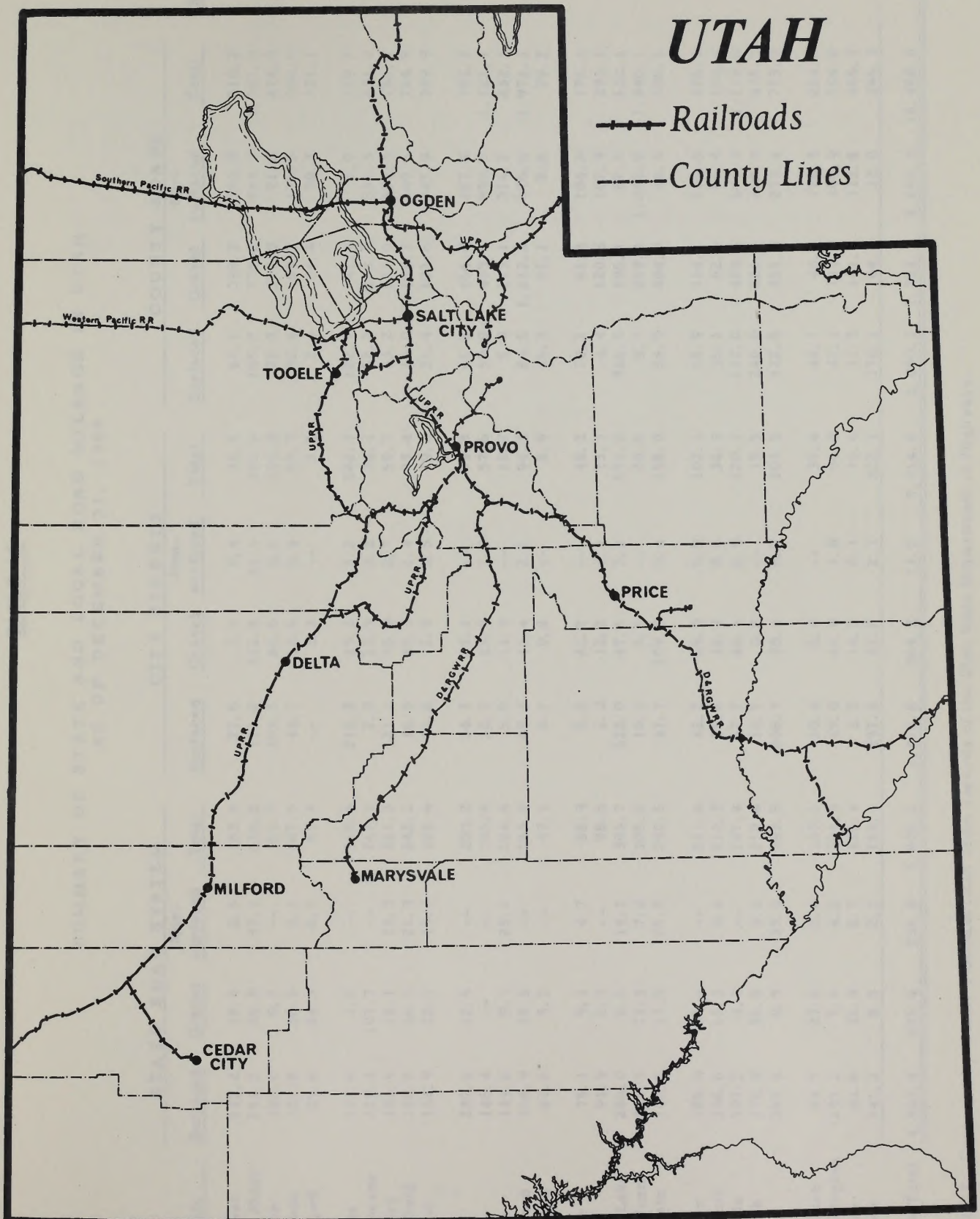


TABLE 45

SUMMARY OF STATE AND LOCAL ROAD MILEAGE IN UTAH
AS OF DECEMBER 31, 1964

County	STATE ROAD SYSTEM				CITY STREETS				COUNTY ROADS				TOTAL ALL SYSTEMS
	Surfaced	Gravel	Non-		Surfaced	Gravel	Non-		Surfaced	Gravel	Non-		
			surfaced	Total			surfaced	Total			surfaced	Total	
Beaver	132.2	18.6	2.6	153.4	27.6	7.5	0.4	35.5	61.1	398.2	350.9	810.2	999.1
Box Elder	253.2	29.9	33.1	316.2	111.2	112.8	31.6	255.6	185.2	778.2	543.9	1,507.3	2,079.1
Cache	186.0	0.3	--	186.3	205.3	86.6	2.1	294.0	72.3	329.9	71.8	474.0	954.3
Carbon	127.8	36.6	3.1	167.5	44.7	12.6	0.4	57.7	92.4	69.7	176.5	338.6	563.8
Daggett	29.8	44.9	6.7	81.4	--	2.3	--	2.3	2.4	34.4	90.3	127.1	210.8
Davis	117.8	1.6	--	119.4	216.2	29.3	3.2	248.7	102.1	41.4	6.0	149.5	517.6
Duchesne	159.4	107.7	--	267.1	7.0	23.9	3.2	34.1	32.2	253.5	535.3	821.0	1,122.2
Emery	183.9	18.1	19.3	221.3	21.1	35.9	2.7	59.7	53.2	377.6	355.3	786.1	1,067.1
Garfield	120.8	94.5	26.9	242.2	16.5	25.5	1.4	43.4	16.0	159.3	549.6	724.9	1,010.5
Grand	134.9	32.5	15.0	182.4	15.8	2.9	0.5	19.2	31.4	172.6	345.9	549.9	751.5
Iron	237.6	12.6	--	250.2	34.7	25.1	--	59.8	41.8	464.0	287.4	793.2	1,103.2
Juab	146.4	--	--	146.4	32.7	23.9	1.0	57.6	50.0	478.6	593.5	1,122.1	1,326.1
Kane	149.6	9.7	25.1	184.4	5.0	11.7	--	16.7	5.0	113.1	314.2	432.3	633.4
Millard	364.9	18.5	--	383.4	49.3	42.4	2.6	94.3	84.5	1,212.2	676.6	1,973.3	2,451.0
Morgan	41.8	5.3	--	47.1	8.1	0.8	--	8.9	35.3	41.1	2.8	79.2	135.2
Piute	75.1	9.1	4.7	88.9	5.5	42.7	--	48.2	10.1	61.4	104.8	176.3	313.4
Rich	91.9	6.7	--	98.6	2.0	12.2	1.1	15.3	4.4	120.8	167.9	293.1	407.0
Salt Lake	286.0	0.6	19.1	305.7	622.0	47.5	3.5	673.0	366.5	198.1	67.5	632.1	1,610.8
San Juan	229.5	71.5	7.8	308.8	15.3	5.5	--	20.8	9.7	269.4	1,061.0	1,340.1	1,669.7
Sanpete	160.8	13.9	25.8	200.5	47.7	109.9	0.4	158.0	34.9	404.0	66.6	505.5	864.0
Sevier	188.0	23.4	--	211.4	42.2	59.0	0.9	102.1	15.9	314.1	146.5	476.5	790.0
Summit	196.6	15.3	0.4	212.3	15.6	18.7	0.6	34.9	36.1	62.9	55.4	154.4	401.6
Tooele	197.2	0.2	--	197.4	67.1	46.1	6.9	120.1	112.0	400.5	606.3	1,118.8	1,436.3
Uintah	172.9	36.9	9.6	219.4	18.7	0.8	--	19.5	240.0	226.3	408.9	875.2	1,114.1
Utah	357.4	0.9	35.5	393.8	406.3	90.5	6.7	503.5	122.8	351.5	279.4	753.7	1,651.0
Wasatch	93.7	27.8	8.6	130.1	30.4	8.0	--	38.4	44.1	40.4	170.3	254.8	423.3
Washington	193.1	7.6	4.2	204.9	49.0	44.0	1.8	94.8	47.1	149.0	308.9	505.0	804.7
Wayne	93.8	32.9	8.7	135.4	2.2	14.3	0.1	16.6	11.5	141.8	312.8	466.1	618.1
Weber	141.3	8.8	2.2	152.3	297.6	21.8	2.7	322.1	170.1	64.2	12.0	246.3	720.7
State Total	4,863.4	686.4	258.4	5,808.2	2,416.8	964.2	73.8	3,454.8	2,090.1	7,728.2	8,668.3	18,486.6	27,749.6

SOURCE: Prepared by UTAH FOUNDATION from records of the Utah State Department of Highways.

ment for A-B-C highway funds (page 12073 of the Congressional Record for June 3, 1964) is \$9,293,000. Instead of having to pay an equal amount, Utah pays only \$2,723,000 in matching funds, or a "savings" of \$6,570,000.

It is estimated that one-half billion dollars will be spent on the interstate system in Utah. For this amount, a non-public land state would have to pay \$50 million on the 90-10 ratio. But Utah, as a public land state will have to pay only \$25 million on a 95-5 ratio, or a "savings" of \$25 million over the 1961-72 period of the interstate system's construction, an average of \$2,272,000 each year." 50/

III. PRESENT AND FUTURE DEMAND FOR RESOURCES FROM BLM-ADMINISTERED LANDS IN UTAH

The following public land products will be discussed in this section:

- Wood Products
- Water
- Wildlife
- Livestock Grazing
- Recreation
- Minerals

A. Wood Products

1. Present Situation

Excellent data is available to show the annual cut of sawtimber from 1911-1963 on Utah's national forests. Similar data from BLM districts is available for 1965. Table 46 shows the national forest production, and Table 47 shows BLM production.

BLM production of 356.6 M.Bd.Ft. is 0.53% of the statewide production, and 0.59% of the national forest production.

Several industries use wood products from Utah forests. Construction, agriculture (mainly livestock), mining, and the general public, all use these products. In 1962 the kinds of products taken from Utah forests indicate types of uses made of them. Table 48 shows the volume and kinds of products mentioned.

Wood products harvested from BLM-administered lands in 1965 are listed in Table 49. Most BLM sawtimber is used for making lumber, but some cottonwood timber is used for mining purposes or excelsior. The general public uses all of the fuelwood and Christmas trees. Nearly all post and pole production is used for fencing.

The U. S. Forest Service estimates that about 616,000,000 bd. ft. could be harvested annually from the national forests--roughly 10 times the present production. ^{3/} BLM's potential annual harvest is only minimal now, and even its potential harvest is limited because the BLM timber resource is so small. BLM timber also occurs mainly in areas where there is little non-BLM timber; thus, the major value of the stands is often for recreation, not timber production.

2. Future Demands

Statewide, increasing demands for timber are expected to occur. By 1980 the demand for BLM timber is estimated at 750,000 bd. ft. per year.

TABLE 46

TOTAL TIMBER CUT FROM NATIONAL FORESTS IN UTAH
1911 - 1963
(Thousands of Feet, Board Measure)

Year ^a	Cut	Year ^a	Cut
1911	12,468	1936	13,776
1912	11,614	1937	10,977
1913	11,396	1938	11,556
1914	13,491	1939	11,715
1915	24,850	1940	15,300
1916	25,844	1941	17,809
1917	16,869	1942	17,615
1918	16,284	1943	19,370
1919	14,674	1944	28,311
1920	12,400	1945	26,175
1921	11,368	1946	27,650
1922	8,504	1947	39,850
1923	7,658	1948	45,113
1924	9,546	1949	38,950
1925	7,154	1950	41,030
1926	9,249	1951	37,219
1927	6,192	1952	31,031
1928	8,905	1953	41,469
1929	11,056	1954	20,426
1930	13,292	1955	43,293
1931	8,130	1956	57,205
1932	505	1957	47,567
1933	5,296	1958	45,973
1934	10,912	1959	61,325
1935	14,242	1960	55,723
		1961	53,727
		1962	58,195
		1963	75,943

^aFigures for years 1911 - 1915, and 1922 to 1931, and 1948 to 1962 inclusive, are for calendar year; for 1916 to 1921, and 1933 to 1947 are for fiscal year; 1932 is for January to June only.

Source: U. S. Forest Service, Timber Cut and Sold Report.

TABLE 47

Production of sawtimber from BLM-administered lands,
by district, 1965

<u>District</u>	<u>Amount of Sawtimber Cut (M.Bd.Ft.)</u>
Salt Lake	--
Fillmore	6.4
Cedar City	1.2
Richfield	--
Monticello	--
Price	250.0
Vernal	99.0
Kanab	--
TOTAL	356.6

TABLE 48

Products harvested from Utah forests - 1962 ^{3/}

<u>Product</u>	<u>Volume (Thousand cu. ft.)</u>
Saw logs (for lumber)	10,845
Convertor poles, excelsior bolts, charcoal wood, and commercial poles	703
Round mine timbers	245
Posts, fuelwood, miscellaneous, farm timbers	<u>212</u>
TOTAL	12,005

TABLE 49**Wood products harvested from BLM-administered lands,
by district, 1965**

District	Sawtimber (M.Bd.Ft.)	Product Fuelwood (cu. ft.)	Posts & Poles (M.Bd.Ft.)	Christmas Trees (Each)
Salt Lake	--	2,175	16.4	100
Fillmore	6.4	9,215	36.0	2,200
Cedar City	1.2	19,200	52.5	5,470
Richfield	--	79,230	12.4	300
Monticello	--	12,800	56.0	380
Price	250.0	25,600	17.5	1,000
Vernal	99.0	12,415	79.8	130
Kanab	--	1,150	85.6	1,450
TOTAL	356.6	161,785	356.2	11,030

2. Notes**1. Present Situation - statewide**

Utah's water situation is a paradox. While the state has yearly chronic water shortages, over two million acres of canyons, meadows, and flats, and valley bottoms suffer from too much water. Furthermore, the amount of water evaporating from reservoirs, lakes, plants, and soil far exceeds that consumed for public use. Add to this paradox the fact that most of Utah's share of Colorado river water flows out of the state toward, and it becomes apparent that an effective plan for using Utah's water has not yet been affected. 41-5-42/

More and more fence posts are now made of steel than cedar. This trend is likely to continue, and demand for cedar posts from BLM-administered lands should taper off by 1980. The annual harvest of posts will likely decrease from the present 50,000 to at least 40,000.

Fuelwood gathered from Utah forests is mainly dead pinon trees found scattered through woodland stands. Small commercial operators comprise most of the demand for this product, but individual home owners wanting free fireplace wood also account for a large portion. It is believed that BLM-administered lands supply most of Utah's fuelwood because most of the woodland occurs on those lands. The present annual demand of 161,785 cu. ft. of fuelwood will increase as the population and the number of homes in the western states expand. Fuelwood demand should increase at about the same rate of population increase, or $1\frac{1}{2}$ times between 1966 and 1980 in the western states. Accordingly, the public lands will probably be called upon to provide about 243,000 cubic ft. of fuelwood per year.

Christmas tree demand is related to population, but other factors also influence this market. Artificial trees are becoming more popular. In Utah, the percent use of artificial trees has risen from almost none in 1958 to about 6.5% in 1964. It is expected that this trend will continue to encroach on the traditional use of natural trees. Utah residents using artificial trees cited their reasons as economical (29.7%), attractive (23.1%), convenient (20.5%), clean (15.4%), safe (5.1%), and other (6.4%).39/

Natural trees still have a large market. Figures indicate that of 200,000 natural trees on the market in 1963, 98 to 99% were sold. 49/ Only about 5% of that number were harvested from BLM-administered lands. Figures also indicate that pinon pine, the species harvested from BLM-administered lands, is becoming less popular as a Christmas tree. In 1960 they comprised 43.7% of the trees retailed; in 1961, 38.2%; and in 1963, 29.7%. 40/

These figures do not spell a bright future for commercial sales of pinon pine Christmas trees from Utah's BLM-administered lands. Although total trees harvested jumped from 4,670 in 1963 to 11,030 in 1965, it is expected that the long-range annual harvest will level off at about 10,000 trees.

B. Water

1. Present Situation - Statewide

Utah's water situation is a paradox. While the state has yearly chronic water shortages, over two million acres of swamps, marshes, mud flats, and valley bottoms suffer from too much water. Furthermore, the amount of water evaporating from reservoirs, lakes, plants, and soil far exceeds that consumed for public uses. Add to this paradox the fact that most of Utah's share of Colorado River water flows out of the state unused, and it becomes apparent that an effective plan for using Utah's water has not yet been effected. 41 & 42/

Utah's annual precipitation averages 13 inches, or 58,974,000 acre feet. This varies from 5" in desert country to 60" in mountains. Water yield, or the amount of water emerging from Utah streams and tributaries, totals about two inches annually, 8,551,000 acre feet. Runoff varies from .25 inches in the desert to 40 inches in the mountains. Utah's two-inch runoff compares meagerly to the national eight-inches average. This water yield is less than 15% of the total precipitation. 41/

Illustration 13 relates precipitation and water yield to land area. It shows that nearly 80% of the water yield occurs on just 20% of the land area. 41/ BLM administers little of that 20% since most of it lies in the Wasatch and Uinta Mountain ranges.

Water yields occur in the three major river basins as follows: 41/

<u>River Basin</u>	<u>Yield in Acre Feet</u>	<u>%</u>
Columbia	54,000	1%
Great Basin	4,880,000	57%
Colorado	3,617,000	42%

The source of fresh surface water in Utah differs between the Great Basin and Colorado River Basin. In the latter, nearly all the stream flow in major rivers originates in other states. In the Great Basin, precipitation supplies most of the surface water.

Of water originating in Utah, 60% runs off in just two months--May and June. That time period, of course, coincides with spring runoff from mountain snow packs. Most of this water comes from elevations exceeding 7,000 feet. 42/

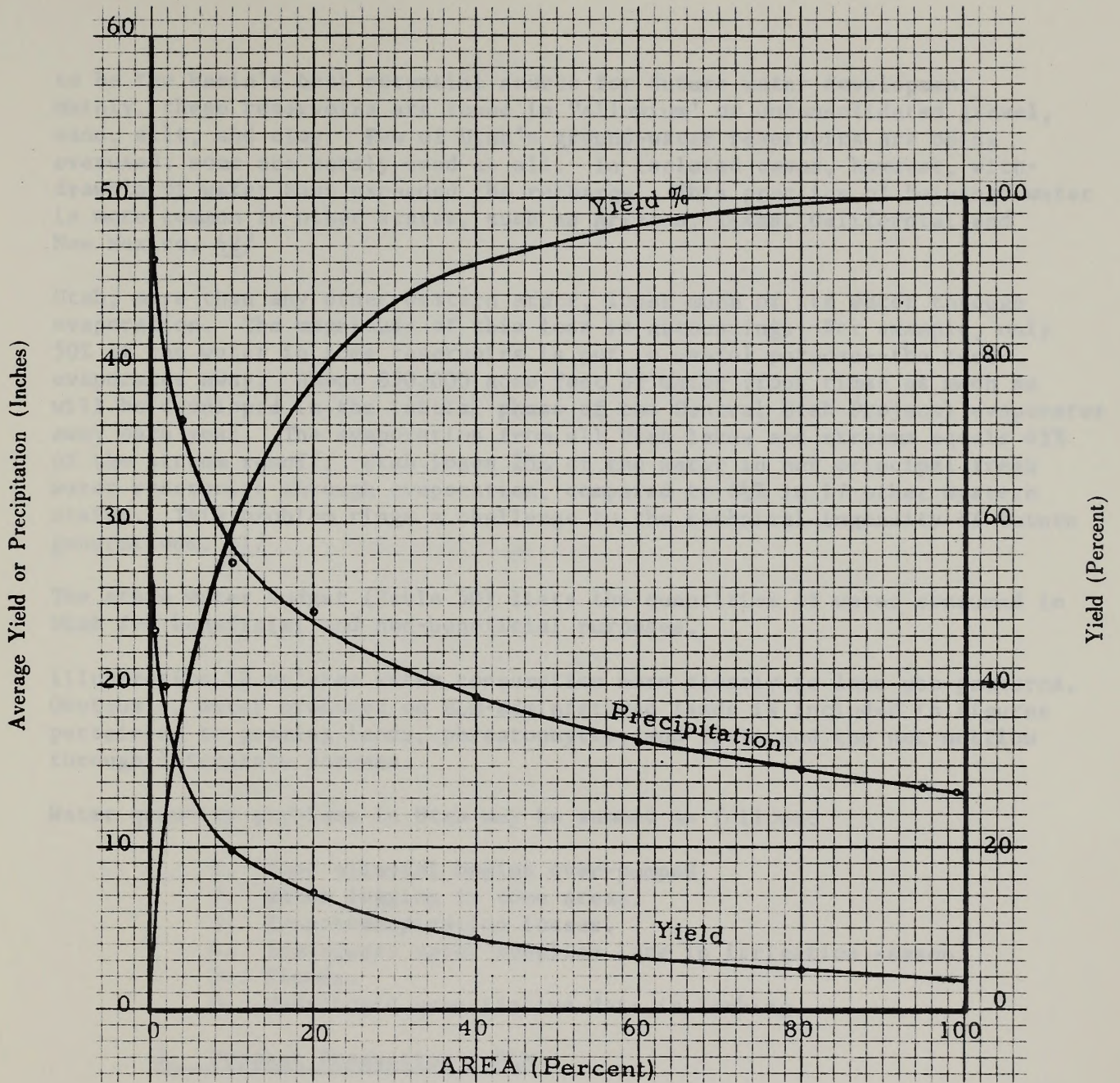
Flooding often results from the heavy, sudden discharge of water in the spring. Damage is most severe when floods hit urban areas, but rural properties are also affected. Roads in many parts of Utah wash out yearly, and bridges are also frequently damaged.

This uneven arrival of water also causes another type of problem. About two-thirds of Utah's irrigated farmland is water-deficient, partly because supplies run short late in the crop-growing season. A longer runoff season would alleviate much of this water deficiency. The variable stream flow problem is especially serious in the Great Basin but has been partially resolved in the Colorado River Basin. There, the Colorado River storage project has capacity to regulate river flows for periods greater than 25 years.

A relatively untapped water source in Utah is ground water reservoirs.* These reservoirs, though not accurately measured, are believed to hold enough water to fill all existing manmade reservoirs many times. Ground water reservoirs in Utah are mainly located in the Great Basin and are considered

*New groundwater data in Utah's Upper Colorado River Basin is now published. See Reference No. 51.

ILLUSTRATION 13



PRECIPITATION—WATER YIELD RELATIONS FOR THE STATE OF UTAH 41/

to be the basin's best potential source for future water development. Mainly, these reservoirs are found in "alluvium" or unconsolidated gravel, sand, silt, and clay. Few of Utah's ground-water reservoirs are being overused; some are hardly used at all. In isolated cases, however, withdrawals of water have exceeded the recharge. This practice of "mining" water is more common in other states, such as Arizona, Texas, California, and New Mexico. 42/

Utah, more than any other western state, loses much of its water through evaporation. The magnitude of this loss is astounding. For example, only 50% of the water in some reservoirs is put to useful purpose--the rest evaporates away. About 850,000 acre feet of water (four times as much as will be developed in the initial phase of the Central Utah Project) evaporates away each year. The evaporation from all Utah lakes and streams equals 45% of the stream runoff. Utah loses 25% of the water in her principal fresh water reservoirs through evaporation, compared to 6½% in 17 other western states. This problem rings a challenge to the technical ingenuity of future generations. 41/

The state water budget (Table 50) lists the quantities of water consumed in Utah for beneficial and non-beneficial purposes.

Illustration 14 relates water consumption more closely to land use patterns. Obviously, water produced on BLM-administered lands is included in figures pertaining to grazing lands, phreatophytes, mud flats and the net outflow through interstate streams.

Water quantity problems in Utah may be summed as follows:

1. Some alluvial basins over-pumped.
2. Water logging in some areas.
3. Evapotranspiration losses.
4. Inadequate water supplies late in irrigation season.
5. Floods.
6. Hydrologic quantitative data is lacking.

2. Present Production - BLM

Water production estimates on Utah's BLM-administered lands were prepared this year by the state office resource management staff. Their figures show:

	<u>Upper Colorado River Basin</u>	<u>Great Basin</u>
Mean annual precipitation	10"	9"
Average runoff into streams & rivers	.9"	.8"

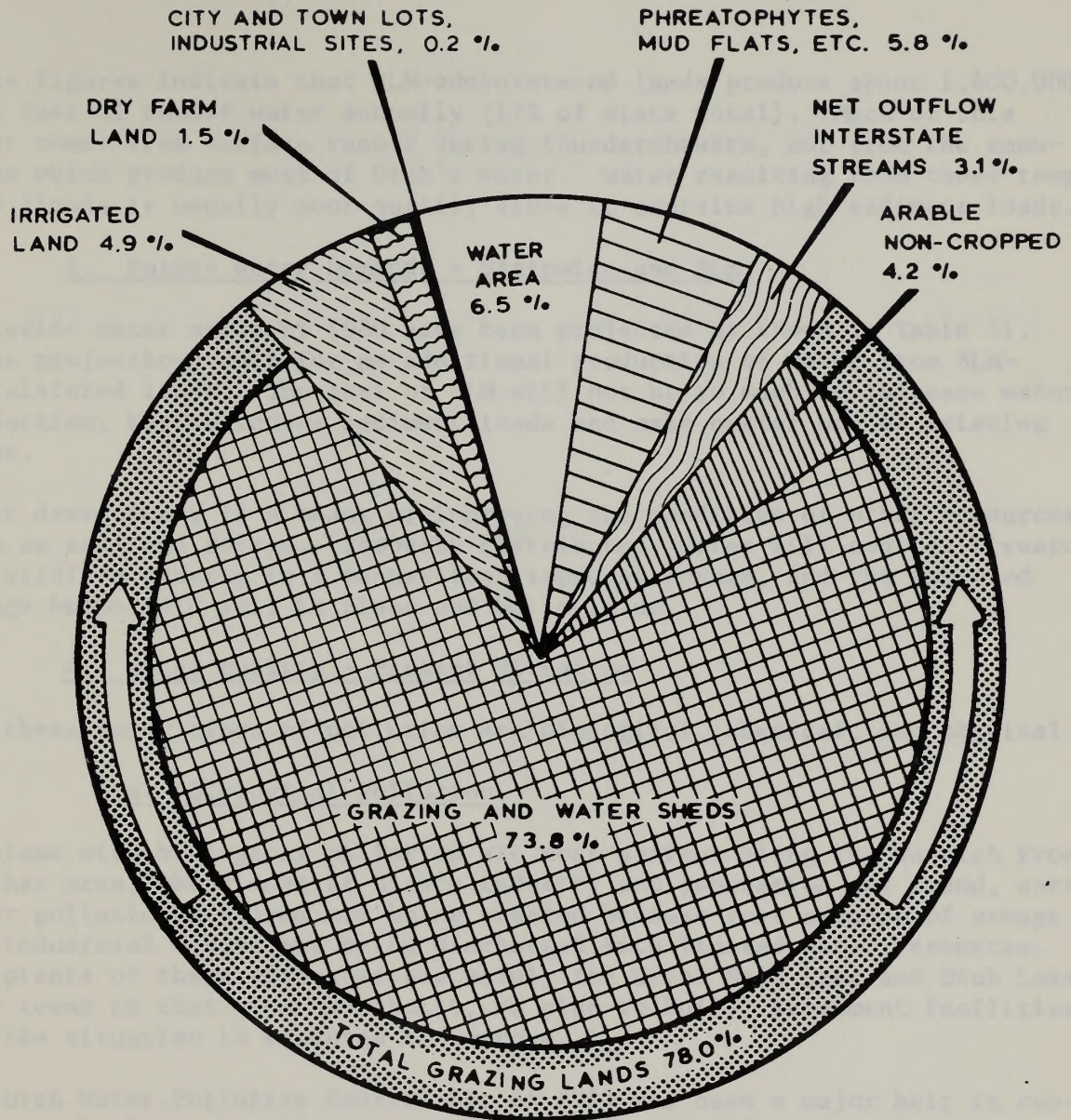
TABLE 50

State Water Budget 41/

Precipitation	58,974,000	(13.20)*
Net Outflow from streams	1,810,000	(0.40)
Consumed within state boundaries	57,164,000	(12.80)
<u>Non-benefit Consumption</u>		
Evaporated from Great Salt Lake	3,000,000	(0.67)
Evaporated from fresh water lakes and streams	848,000	(0.19)
Evaporated from phreatophytes, mud flats, etc.	3,400,000	(0.78)
<u>Beneficial Consumption</u>		
Evapotranspiration from irrigated lands	2,900,000	(0.65)
Municipal and industrial consumption	150,000	(0.04)
Evapotranspiration from forest, range, dry-land crops, etc.	46,866,000	(10.47)

* 1st figure is acre feet, 2nd figure is inches

ILLUSTRATION 14



WATER CONSUMPTION BY AREAS, UTAH 41/

These figures indicate that BLM-administered lands produce about 1,600,000 acre feet of runoff water annually (17% of state total). Much of this water comes from surface runoff during thundershowers, not from the snow-packs which produce most of Utah's water. Water resulting from these temporary floods is usually poor quality since it contains high sediment loads. 14/

3. Future Water Demands - Statewide and BLM

Statewide water needs by 1980 have been projected as shown in Table 51. These projections call for no additional production of water from BLM-administered lands. The goal of BLM will not be so much to increase water production, but to reduce sediment loads and make better use of existing water.

Water development is a means of improving the condition of other resources, such as soil and forage. Properly distributed, water will control livestock and wildlife grazing in a manner that improves forage, and the improved forage helps hold soil in place and build it up.

4. Water Quality - Present Situation

The three major types of pollution are biological, chemical, and physical.

a. Biological Pollution

Problems with biological pollution are most serious along the Wasatch Front. In that area, where most of Utah's industry and population are found, serious water pollution problems are being created because vast amounts of sewage and industrial wastes are being discharged into limited water resources. Recipients of these effluents are mainly the Great Salt Lake and Utah Lake. Many towns in that area have built, or plan to build, treatment facilities, and the situation is expected to improve. 41/

The Utah Water Pollution Control Act of 1953 has been a major help in controlling biological pollution. Between 1953 and 1963 it helped construct more than \$15 million worth of waste treatment facilities with an 800,000 population equivalent capacity. These facilities also have a total hydraulic capacity of nearly 135 million gallons per day. 43/

BLM has had few problems with biological pollution. Unauthorized dumping on public lands could cause some pollution, however, and this problem is being checked before becoming serious. Heavy recreation use in areas lacking sanitation facilities could pose a problem, but has not yet done so. Sanitation facilities are being provided for those areas.

As with all other surface waters in the state, it is not safe to drink from streams or impounded waters on public land. Wildlife and livestock pollute

TABLE 51

Estimated Present and Projected Water Diversion
Requirements in Utah* 41/

User	Present Use (Acre-feet)	Projected Needs 1980 (Acre-feet)	Percent Increase
Municipal	200,000	500,000	150
Industrial	200,000	1,100,000	550
Irrigation	5,000,000	5,500,000	10
Waterfowl	<u>5,850,000</u>	<u>6,600,000</u>	<u>13</u>
TOTALS	11,250,000	13,700,000	21

* Adapted from information presented at the hearings of the Senate Select Committee on Water Resources, 1959.

these waters, and little can be done to correct it. This means that public land developments needing potable water must be located near tested springs or wells, or else treatment facilities must be built. Recreation developments have been most seriously affected by water pollution.

b. Chemical Pollution

Chemical pollution of Utah water has its greatest impact on agriculture. Of Utah's 2,219,000 acres in cultivated crops, 1,436,000 acres are irrigated, and the quality of the irrigation water determines to some extent the production from this land. 42/ Poor chemical quality is also an important factor in livestock use.

Water produced high in Utah's mountains is generally high quality, and often contains less than 100 parts per million (ppm) of dissolved solids. Water in the lower streams may contain more than 3,000 ppm. Great Salt Lake water is about 25% dissolved solids. This high mountain water is purer because the rocks there are more resistant to water's solvent action. Not only do rocks in lower regions dissolve more easily, but irrigation water once used and returned to streams picks up many minerals from the agricultural soils. Soils in the lower areas are generally more saline or alkali than higher soils. Illustration 15 shows the concentrations of dissolved solids in major Utah rivers. 42/ Table 52 lists details on concentration and discharge of dissolved solids and sediment in various Utah streams.

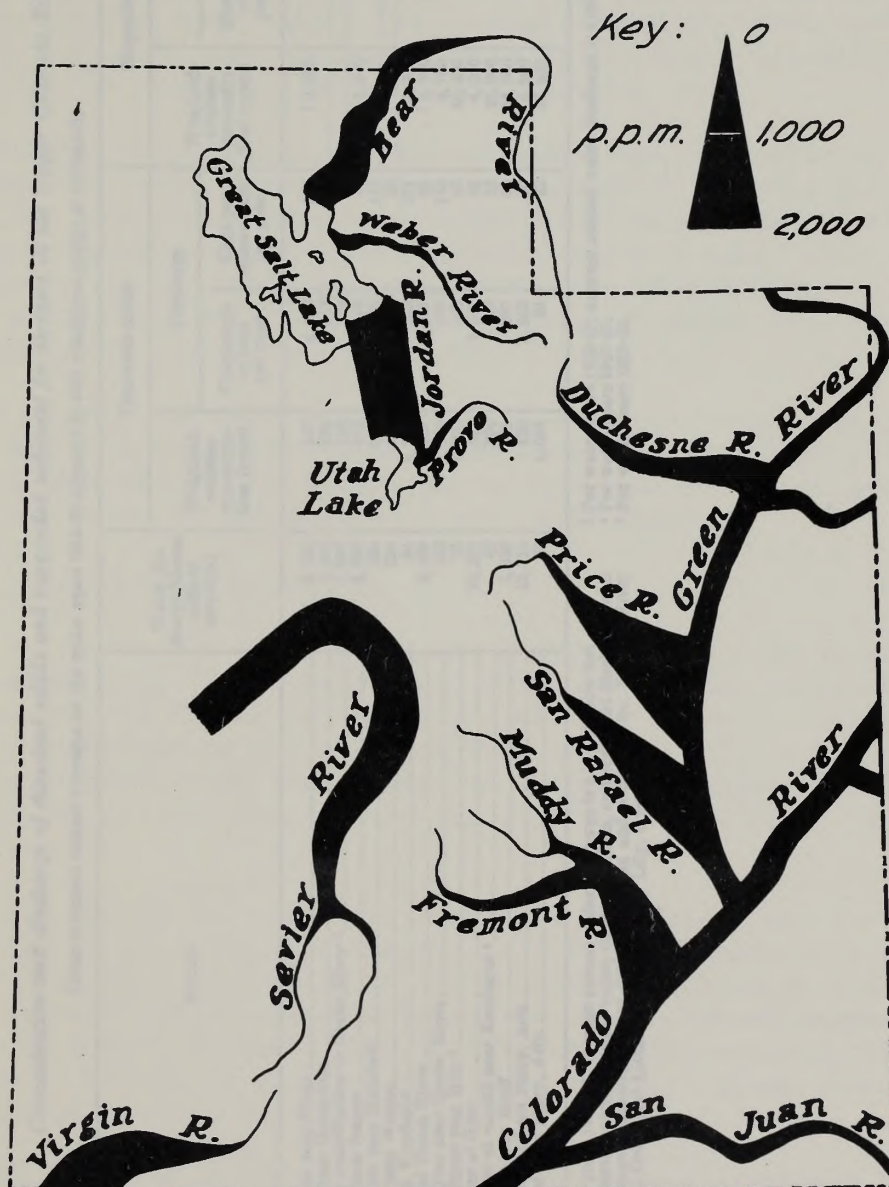
The chemical quality of water differs considerably from stream to stream, and it may also vary in the same stream when differing amounts of water are discharged. Differences in solubility, chemical characteristics, and hydrologic properties of rocks in the drainage basins cause the varying chemical changes in water. 42/

It has been found in western Utah valleys that the chemical character of ground water varies between valleys and within the same valley. Quality is good where drainage is good, bad where drainage is poor. If drainage is too poor, the water may even be unfit for livestock. The best ground water in undrained valleys is often found at the edge of the valley where fresh water enters and has not yet been contaminated. 44/

Livestock tolerances of mineralized water vary. If animals are raised on salty water their tolerance is high. Different species also vary in tolerance. Sheep can withstand more than cattle, cattle more than horses. Tolerance levels must be based on the kinds of minerals as well as ppm. More study is needed on specific tolerance limits of livestock to dissolved solids in water. 44/

ILLUSTRATION 15

Dissolved-Solias Concentration 421



Mineralization of water in the principal rivers of Utah. (Width of river line indicates average concentration in parts per million.)

TABLE 52

Concentration and discharge of dissolved solids and suspended sediment for streams in the Upper Colorado River Basin, Utah 42/

[Data represent annual averages for the water years 1914-57 adjusted to 1957 conditions except as indicated]

Stream	Water discharge (thousands of acre-feet)	Dissolved solids			Suspended sediment		
		Weighted-average concentration (ppm)	Discharge		Weighted-average concentration (ppm)	Discharge	
			Thousands of tons per year	Tons per square mile per year		Thousands of tons per year	Tons per square mile per year
Colorado River near Cisco	5,534	547	4,120	171	12,050	114,351	1,595
Green River near Greendale	1,645	378	847	56			
Yampa River contribution to Green River ¹	1,603	156	339	49			
Green River near Jensen	3,338	316	1,435	55	1,300	5,902	226
Duchesne River near Randlett	556	608	460	117			
White River near Watson	554	439	331	82			
Price River at Woodside	84	2,110	242	161	33,900	3,879	2,586
Green River at Green River	4,538	427	2,652	65	3,760	20,800	3,622
San Rafael River near Hite	102	1,370	190	113	6,700	931	651
Dirty Devil River near Hite ¹	74	1,990	198	45	50,200	5,000	1,147
Colorado River at Hite	10,260	1,527	7,367	96	4,000	55,960	731
Escalante River at mouth near Escalante ¹	62	300	25	13	20,900	1,757	874
San Juan River near Bluff	2,028	361	997	43	13,500	37,100	1,613
Colorado River at Lees Ferry, Ariz.	12,710	499	8,642	80	5,800	101,300	939
Paria River at Lees Ferry, Ariz.	23	1,090	34	22	84,400	2,655	1,691

¹ For water years 1930-57; average annual water discharge is 5,141,000 acre-feet.² Data represent average annual water, dissolved-solids, and sediment discharge, and weighted-average concentrations of dissolved solids and sediment for Yampa River near Maybell, Colo., and Little Snake River near Lily, Colo.³ For water years 1930-57; average annual water discharge is 4,067,000 acre-feet.⁴ For water years 1947-57.⁵ For water years 1951-55.

c. Physical Pollution

Physical pollution refers to the amount of sediment found in water. This is BLM's most serious water pollution problem. An estimated 48,000 acre feet (or 2,000,000,000 cubic feet) of soil from BLM-administered lands is redeposited by water each year. The average annual sediment yield is estimated at 1.6 acre feet per square mile in the Upper Colorado River Basin, 1.29 acre feet per square mile in the Great Basin. 14/

Sediment movement, or erosion, has an economic impact in several ways. First it calls for more expensive dams so that water storage projects can compensate for heavy silt deposits. Conditions which cause erosion also require heavy expenditure of money. Erosion control dams, checks, and dikes on Utah's public lands have cost more than \$432,000 since 1931. 14/ Many other projects, such as seedings and water developments, have had as a partial purpose the stabilization of soils.

Perhaps the biggest economic impact of soil loss is the accompanying loss of productive power in residual soils. Many desert soils are only thin veneers at best, and when they erode away vegetation either ceases to grow or, as is more often the case, is replaced by lower value species.

5. Future Quality Demands

Biological contamination of water in all parts of Utah will probably be closely controlled by 1980. A massive effort across the entire country has been launched to "clean up" America's waters, and with Utah's biological pollution problems rather minor as compared to other states, it is expected that industrial wastes and sewage will no longer be dumped into waterways. On public lands, illicit dumping and any resultant pollution, is nearly under control already.

Chemical water pollution will continue to be a problem, and the 1980 picture is unlikely to be significantly changed. In closed basins with poor drainage, water wells will be drilled at the edges where there is fresh water. Tolerance limits of livestock will be better known, and adjustments will accordingly be made. It boils down to this--man will not significantly change but will adjust to chemical pollution in rural areas because there are many ways of getting around the problems.

Physical pollution, or sedimentation, will still be a problem in 1980, but much will have been accomplished. Through better resource management, application of new technology, and more investment in soil stabilization projects, much soil movement will be stopped.

C. Wildlife

1. Present Situation

Hunting and fishing are sizeable segments of Utah's economy. Together they generated \$70 million of economic activity in 1963, and annual growth has occurred at a rate of 5% in recent years. 4/ If that continues, the 1980 figure will be close to \$130 million.

BLM resources contribute substantially to these activities in Utah, particularly big game hunting. Data compiled by Mayo W. Call, wildlife specialist in BLM's Utah state office, relates the importance of BLM-administered lands to overall big game needs in the state. Discussion of this data follows:

Table 53 indicates that BLM-administered lands supply almost one-third of Utah big game forage needs. There is, however, a large variance between species--moose, for instance, consume no forage from these lands, while the small buffalo herd in the Richfield district relies on them for 91.7% of its feed. Deer, the most important species economically, obtain nearly a third of their forage from BLM-administered lands.

The forage figures in Table 53 are not precise indicators of the important role public lands play in big game management. Neither are kill figures, which suggest that between 20-30% of the deer are taken from these lands. The importance of BLM-administered lands rests in their role of supplying much critical deer winter range.

Table 54 shows the public land acreage of critical big game range in Utah--most of this is winter range. A preliminary study found that more than a third of all BLM administered lands in Utah (36.8%) are in this category. These lands comprise about 80% of the total deer winter range in the state. Further studies are underway to refine and expand this data.

Table 55 contains wildlife data for both fish and game. The table summarizes the amount of vital wildlife habitat which BLM administers in Utah. Big game, upland game, migratory birds, warm water fish, and cold water fish all have sizeable habitats on public domain, though big game far overshadows the other categories.

2. Future Demands

Factors such as past hunting trends, present heavy hunting demand, and future population expansion indicate increasing importance of BLM wildlife resources in Utah by 1980. Other factors also bear this out.

The practice of charging hunters for use of private lands is fairly common. As the population grows and more hunters emerge in the next few years, fur-

TABLE 53

Big Game Use of Public Lands-1965

Estimated Big Game Populations in Utah * ^{14/}

Species	Number	Annual AUM Demand	No. Using BLM Lands	Annual AUMs Used on BLM Lands	% of Demand Met by BLM Lands
Deer	325,000	975,000	237,100	298,238	30.6
Elk	4,200	37,800	682	2,289	6.1
Antelope	2,000	4,800	1,849	4,051	84.4
Moose	85	1,020	0	0	0
Buffalo	70	1,260	70	1,155	91.7
Bighorn Sheep (desert)	<u>310</u>	<u>930</u>	<u>310</u>	<u>780</u>	<u>83.9</u>
TOTALS	331,665	1,020,810	240,011	306,513	30.0

* Based on best information available - estimated by Mayo Call

TABLE 54

Wildlife Habitat Inventory**-1965 14/

District	Total Acres Adm. By BLM	Acres Critical For Big Game*	Percent Total Critical
Salt Lake	3,663,960	808,138	22.1%
Fillmore	4,779,977	689,000	14.4
Cedar City	1,595,873	1,181,120	74.0
Richfield	1,870,813	1,073,680	57.4
Monticello	3,394,818	1,312,589	38.7
Price	3,011,337	1,200,000	39.8
Vernal	1,686,102	573,487	34.0
Kanab	<u>2,550,270</u>	<u>1,465,000</u>	<u>57.4</u>
TOTALS	22,553,150	8,303,014	36.8

Total land area in Utah: 52,696,960 acres

Total water surface in Utah 1,649,280 acres

*Most of this acreage denotes important deer winter range. BLM administers relatively little important summer range; two significant summer ranges are the Henry Mountains and Deep Creek Mountains.

** Prepared by Mayo Call

TABLE 55

AREAS OF BLM LANDS OF VITAL IMPORTANCE TO WILDLIFE IN UTAH - 1965

14/

District	Big Game	Upland Game	Migratory Birds	Warm Water Fish	Cold Water Fish	Total
Salt Lake	: Acreage of land, lakes & resvrs.: 808,138	: 383,649	: 2,760	: 118	: 0	: 1,194,665
	: Miles of streams or rivers	:	:	:	:	:
Fillmore	: Acreage of land, lakes & resvrs.: 689,000	: 4,480	: 1,280	: 0	: 23.9	: 694,760
	: Miles of streams or rivers	:	:	:	:	:
Cedar City	: Acreage of land, lakes & resvrs.: 1,181,120	: 22,400	: 3,700	: 4,500	: 800	: 1,212,520
	: Miles of streams or rivers	:	: 7	: 0	: 10	: 17
Richfield	: Acreage of land, lakes & resvrs.: 1,073,680	: 216,080	: 3,748	: 3,748	: 3,748	: 1,301,004
	: Miles of streams or rivers	:	:	: 115	: 0	: 115
Monticello	: Acreage of land, lakes & resvrs.: 1,312,589	: 151,562	: 0	: 0	: 0	: 1,464,151
	: Miles of streams or rivers	: (including proposed)	:	:	:	:
Price	: Acreage of land, lakes & resvrs.: 1,200,000	: 200,000	: 1,000	: 0	: 0	: 1,401,000
	: Miles of streams or rivers	:	:	:	:	:
Vernal	: Acreage of land, lakes & resvrs.: 573,487	: 137,691	: 17,733	: 0	: 15	: 728,911
	: Miles of streams or rivers	:	: 0	: 0	: 12	: 12
Kanab	: Acreage of land, lakes & resvrs.: 1,465,000	: 29,000	: 80,000	: 0	: 80,000	: 1,654,000
	: Miles of streams or rivers	:	:	:	:	:
TOTAL	: Acreage of land, lakes & resvrs.: 8,303,014	: 1,144,862	: 110,221	: 8,366	: 84,548	: 9,651,011
	: Miles of streams or rivers	:	: 7	: 325	: 432.9	: 764.9

Prepared by Mayo Call

ther restrictions on private land use will likely occur. Private land purchases by the Utah Department of Fish and Game and federal agencies will not likely solve the problem, especially in the face of increasing land values. Public lands will, therefore, be looked to more and more to furnish public hunting.

Potential for increasing big game forage is high. BLM technicians estimate that 240,000 acres of range could be treated to provide more and better big game forage and habitat.

Several areas are now being studied to determine the feasibility of establishing herds of antelope, elk, and bighorn sheep. Establishment of new herds or enlargement of present small herds into huntable-sized units would satisfy some of the hunting demand.

Another means of increasing big game forage is to reduce livestock use. This is a tough problem because it impinges directly on the economic well-being of the livestock industry. Careful study of livestock reductions would be made prior to making such a step.

As management of the public rangeland intensifies, more wildlife forage will be produced. An additional 40,000 AUMs of big game forage can also be produced from Utah's critical game ranges through rehabilitation projects. That figure is derived as follows:

Acres of critical game range suitable for treatment	240,000 acres
Present AUM production by above area for livestock & big game	8,000 AUMs
Potential AUM production by above area for livestock & big game	80,000 AUMs
Portion of 80,000 AUMs which would be devoted to big game use	
(50%)	40,000 AUMs

The amount of total forage devoted to big game (50%) is an approximation, based upon observations of several district personnel.

The 40,000 AUMs is an ultimate figure, not likely to be achieved by 1980. The rate at which past rehabilitation projects have been achieved indicates that we will treat about 100,000 acres (44%) of the critical big game range by 1980. That, in turn, indicates that the 1980 big game forage production as a result of rehabilitation projects will be increased over present production by 17,600 AUMs (44% of 40,000 AUMs).

D. Livestock Grazing

1. Present Situation

The statistical picture of the present livestock forage resource in Utah is shown below in Table 56.

TABLE 56

Portion of Utah livestock forage produced from
BLM-administered lands - 1965 * 14/

Total beef cattle in Utah (excl. calves)	423,000
Total beef cattle using BLM lands (excl. calves)	156,682
Percent total beef cattle using BLM lands (excl. calves)	37%
Total AUMs required annually	5,076,000
Total AUMs provided by BLM lands	706,821
Percent total AUMs provided by BLM lands	14%
Total sheep in Utah (excl. lambs)	1,077,000
Total sheep using BLM lands (excl. lambs)	862,142
Percent total sheep using BLM lands (excl. lambs)	80%
Total AUMs required annual	2,584,800
Total AUMs provided by BLM lands	699,955
Percent total AUMs provided by BLM lands	27%
Total livestock in Utah (excl. calves & lambs)	1,500,000
Total livestock using BLM lands (excl. calves & lambs)	1,018,824
Percent total livestock using BLM lands (excl. calves & lambs)	68%
Total livestock AUMs required annually	7,660,800
Total AUMs provided by BLM lands	1,406,776
Percent of total AUMs provided by BLM lands	18%

* Compiled by Mayo Call

The amount of livestock forage consumed from BLM-administered lands appears to have dwindled over the years. Table 31 shows annual livestock numbers and forage consumption in Utah for the period 1940-1965. Note the steady drop in allowable forage consumption on BLM-administered lands, the smaller number of livestock allowed to graze these lands, and the steady increase in the overall livestock numbers in the state.

This reduction in the amount of forage sold resulted from several factors--past overuse, drouth conditions and recognition that the range must be used at a more moderate rate to allow recovery of productivity and to protect watersheds and other resources.

2. Future Demands

In recent years the BLM has reduced livestock use of public land to just about grazing capacity. It is believed that more use will occur in future years as improved management and rehabilitation projects increase forage production.

The following projection of 1980 livestock forage production is based on a 20-year range improvement plan prepared by the Utah BLM state office range management staff. The figures used here assume that in 1980 75% of the improvement work will be completed and that a small portion of the increased AUMs will be consumed by big game.

Total present AUM livestock consumption from BLM-administered lands	1,406,800
Total AUM increase possible by 1980	425,000
Portion of increase consumed by big game	110,000
Portion of increase consumed by livestock	315,000
Total 1980 AUM livestock consumption from BLM-administered lands	1,721,800

E. Recreation

1. Present Situation

A statistical summary of total outdoor recreation visitor days in Utah for 1965 is given in Table 57. These figures point out that BLM-administered lands now provide about 6.5% of the visitor days in the state.

2. Future Demands

One method of estimating effective demand for 1980 is by projecting certain past trends into the future. Utah's tourist traffic in recent years has increased at a rate which indicates that recreation demand in 1980 will be eight times the present level for the state as a whole. Total demand for Utah in 1980 is therefore estimated at 97,000,000 visitor days annually.

TABLE 57

Summary of Outdoor Recreation Visitor Days
on Utah's Public Land in 1965--By Agency *

<u>Administering Agency</u>	<u>Visitor Days - 1965</u>
BLM	800,000
U. S. Forest Service	8,000,000
Utah Park and Recreation Commission	895,000
National Park Service	2,390,000
Utah State Land Board	<u>46,000</u>
TOTAL	<u>12,131,000</u>

* Compiled by Utah State Office BLM Recreation Staff

It is believed that the rate of visitor day increase on BLM-administered lands will exceed that of the statewide total. As highways are constructed across public lands and some of the national and state parks are further developed, the BLM-administered lands will become more accessible. Substantially more recreation facilities on these lands are planned in the next few years, and this will attract larger numbers of tourists and will lengthen their visiting time. On the basis of these considerations, BLM recreation specialists estimate that recreation visits on BLM-administered lands will increase even faster than for the state as a whole. Projection estimates of this demand to 1980 suggest the present demand will increase about 12 times. Accordingly, the 1980 demand is estimated at 9,600,000. This would increase the amount of statewide recreation visitor days provided by BLM to 9.9%.

3. Natural Beauty Needs

The theme of natural beauty has demanded much attention in recent years largely because the President has shown particular interest in it. BLM has responded in several ways--through cleanup of dumpgrounds on public lands, stronger restrictions on utility and material site rights-of-way, and keeping close watch over the beauty aspects of management programs near highways.

Care of landscape values will be a tough job in years ahead, but it will also be important. Call it open space, room to roam, or the outdoor heritage, there will be less and less of it, because of increasing demands on land, and it will take a determined effort to maintain it at a high quality. The surge of population growth already underway in the west will have a forceful impact on the natural beauty program. Protecting public lands from the litter, the waste, the trampling, and the destruction caused by mass human use will be one of BLM's greatest problems and challenges in the future.

F. Minerals

Table 58 summarizes present and projected (1980) mineral production from all lands in Utah. Following is a brief explanation of the bases for the projections:

Beryllium - Assures that technology will develop need for this mineral which Utah has abundance of.

CO₂, Sand and Gravel, Salt, Coal, Building Stone, Gemstones, Perlite, and Clay - Projection tied closely to projected population increases (1½ times present production).

TABLE 58

Present and Projected Mineral Production for all lands in Utah
and for BLM-administered lands in Utah (1964 & 1980)

Mineral	Unit of Measure	1964 State Production	%BLM**	1980 State Production	% BLM **
Beryllium	Short Tons	--	--	1,000	80
CO 2	1000 cu. ft.	100,905	100	150,000	100
Clay	Short Tons	127,000	1	170,000	1
Coal	Short Tons	4,720,000	45	6,400,000	50
Copper	Short Tons	199,588	1	330,000	1
Gem Stones	Dollars	75,000	70	100,000	70
Gold	Troy Ounces	287,674	5	400,000	5
Iron Ore	Long Tons	2,082,000	45	4,000,000	45
Lead	Short Tons	40,249	5	40,000	5
Lime	Short Tons	163,000	0	175,000	0
Natural Gas	Million cu.ft.	80,175	35	120,000	35
Perlite	Short Tons	2,003	80	4,000	80
Petroleum	42 gal. Bbls.	28,575,000	33	37,000,000	33
Potash	Short Tons	150,000	5	400,000	10
Pumice	Short Tons	28,000 *	0	70,000	10
Salt	Short Tons	371,000	0	500,000	0
Sand & Gravel	Short Tons	10,218,000	18	16,000,000	20
Silver	Troy Ounces	4,552,000	5	7,000,000	5
Stone	Short Tons	3,105,000	1	4,600,000	1
Uranium Ore	Short Tons	761,180	60	700,000	60
Vanadium	Short Tons	405	60	400	60
Zinc	Short Tons	31,428	5	30,000	5

* 1963 Production

** Data compiled by Eugene Pearson

Gold, Copper, Silver, Oil, Natural Gas - Projections for Utah production are based on national projections made by the individual industries. If silver and copper prices rise, the amount of reserves will grow; and the projections could prove conservative.

Uranium, Vanadium, Lead, and Zinc - Projections show maintainance of present production. Demand will likely be high, but Utah's reserves are low.

Iron Ore - Projection is only a guess and will be tempered largely by advances in technology.

Lime - Assumes a small increase but difficult to project because of uncertain future uses.

Pumice and potash - Significant projected increase assumes that technology will find many more uses for pumice and potash.

IV. A SUMMARY OF UTAH'S ECONOMY AND THE BLM ROLE

A. Present Situation

Utah's economy compares to that of six nearby states as follows:

1. Total personal income ranks third, behind Colorado and Arizona. 1/
2. Per capita income ranks fourth, behind Nevada, Colorado and Wyoming. 9/
3. Population ranks fourth, behind Colorado, Arizona and New Mexico. 20/
4. Value added by manufacturing ranks second, behind Colorado. 1/

Utah's growth rate each decade since 1940--in population, employment, and total personal income--has exceeded that of the nation.

From 1940 to 1964 the population of Utah increased 81 percent, compared with the national increase of 45 percent. In the same period, the labor force in Utah increased 100 percent, while the national increase was only 50 percent. Employment in Utah increased 130 percent, compared with the national average of 60 percent. Since 1947, the population of Utah has increased annually at a rate of 3.1 percent, that of the nation by 1.56 percent. From the official census of April 1960 to July 1, 1964, the national increase in population was 7.3 percent, that of Utah 11.2 percent. By July 1, 1964 Utah's population was 0.52 percent of the nation's compared with 0.50 percent in 1960 and 0.42 percent in 1940. 1/

Total personal income in Utah in 1965 was \$2,341,000,000, 0.45 percent of the national total. This is an increase over the 1954 figure of 0.40 percent.

Many older industries, such as steel and copper and non-metallic minerals, have expanded. Many new ones have been added, including uranium since 1950, oil and gas on a major scale since 1955, beryllium in 1964, and other minerals from the brines of lakes and wells beginning in 1964. Value of mineral production now exceeds \$400 million per year compared with \$300 million in 1955 and \$100 million in 1940.

In 1955 missiles and electronics became important Utah industries. Despite some shift in national procurement and reduction in Utah's employment in these industries beginning in 1963, missiles and electronics constitute another new frontier.

Agricultural patterns are changing. Livestock and livestock products comprise almost 80 percent of total agricultural income. There are only half as many farms in Utah as there were 30 years ago, but the average farm has more than doubled in size, and capital investment per farm now exceeds \$60,000. 2 & 45/

Utilization of natural gas and electricity, and communication facilities, have almost doubled since 1953. These are also a measure of trends in industry and in the home.

Sizeable reclamation projects and more effective utilization of water and land resources are also part of Utah's changing pattern.

One pattern remains constant. Utah continues to lead the nation in the average level of education of the population over 25 years of age, and also in percentage of its citizens beyond the kindergarten age enrolled in schools and colleges.

The Bureau of Land Management plays a dual role in Utah's economy. First resources from lands under its administration contribute significantly to several industries in the state. Second, these same lands comprise a reservoir of resources for use in the future. Pressures from an expanding population, tourism, mining, agriculture, defense, urbanization--all these call for BLM to husband the public land resources in responsible fashion. Stewardship of these lands will require managerial decisions based upon informed and factual knowledge of the economic climate within the state and region. For that purpose this economic profile has been prepared.

B. Future Situation

Utah's economy in 1980 will be structured similarly to its present form, but certain industries will have grown or taken on more emphasis.

Tourism especially will expand. The director of Utah's Travel Council predicts that tourism will expand six-fold in the next few years to a \$1 billion industry. 46/

Mining has a rich future in Utah. The state is sometimes called the "Treasure House" of the nation because it produces a greater variety of minerals than any other state. By 1980, Utah's mineral industry is expected to contribute even more to the economy. Oil shale, lake brines, potash, copper, phosphate, iron, salt, uranium, coal, gas, and petroleum are major minerals forming the base for growth.

Utah's agricultural industry in 1980 (farming and ranching) is not expected to play any larger role in the economy than it now does. Its further development will be affected by: (1) Continuing change of consumer tastes for livestock (especially beef); (2) U. S. and world needs for food and development of the U. S. food for peace programs; (3) conversion of farmland to urban areas; (4) development of reclamation projects to serve fertile but arid lands; and (5) technological changes in farm marketing practices.

Though gross income from farming in Utah will probably rise by 1980, its proportional contribution to the state economy is likely to be smaller due to faster growth of other industries. Additional reclamation of land will be partially offset by urbanization of existing farmland. More forage will be grown on fewer acres of rangeland, and proportionately more beef will come from feed lots versus the range.

The statewide forest industry relies heavily on the national forests for its timber supply. Ninety percent of the 1962 timber harvest came from those lands. ^{3/} The trend will continue through 1980, and the amount of timber cut annually is expected to increase by 1980. This increase will occur because of the heavy population increase expected in the western states and the accompanying urban expansion. The acres of commercial timberland in Utah, however, is expected to decline due to encroachment from other uses.

In broader scope, the whole Utah economy appears headed for a dynamic, interesting and fairly vigorous future. The belief generally prevails that the state's growth in population and employment can continue to increase at a rate above the national average for many years. Per capita income rate of growth is below the national average with nothing foreseen which will change this.

BLM will have a significant role in the economic growth of Utah. Its mandate will be to manage public lands so that increasing amounts of higher quality goods and services are produced.

Specifically, more rangeland products, such as wildlife and livestock forage, must be produced on fewer acres. Other benefits, such as better soil development and retention, more and better water, prevention of flood damage, and enhancement of natural beauty, must also be realized.

The mineral industry will look to BLM-administered lands for much of its raw mineral resources. BLM must work within the laws and regulations in a manner to facilitate this industry. Demands for these minerals will generally rise, but the demand for individual minerals will be subject to changes and developments in market conditions, import-export policies, technological advances, and other factors.

Lands now administered by BLM will receive much more outdoor recreation use by 1980. Some recreation-type lands will be transferred to other agencies and groups. Other lands of exceptional recreation quality will remain under BLM administration and will be devoted to intensive recreation use. By 1980 tourism and other recreational use of BLM-administered lands is expected to be 12 times greater than present use. Better access will be a major contributor to this increased use. Sightseeing will continue to be the major outdoor recreational activity.

Forested lands of BLM in Utah will not provide large amounts of timber to the forest industry by 1980. Timbersales from these lands will be only a minor portion of total state sales. Though there will likely be a lively demand for woodland products, such as pine nuts, fence posts, Christmas trees, and firewood, no large industry will be founded on these products. Much of the BLM forest land and some woodland will be used primarily for recreation and wildlife.

Big game hunters will use public lands even more by 1980. To satisfy this demand, range rehabilitation projects must provide forage and water for wildlife, as well as for livestock. Critical areas for big game habitat may have to be set aside to perpetuate sufficient numbers of high quality big game animals. The economic contribution of big game hunting in Utah is significant. Together with fishing, \$70 million of economic activity was generated in 1963, and this figure has been growing annually at about 5%. 4/ At that continued rate, a \$130 million of activity could result by 1980.

Perhaps BLM's biggest resource is the land itself. It is certain to become more important in the western states in coming decades if population projections prove accurate. Urbanization, industrial growth, reclamation projects, highways, rights-of-way--all these are consuming vast areas of land, a commodity which not too long ago was thought abundant. Urbanization is not likely, however, to make stringent demands on BLM lands in Utah by 1980. Though the population is expected to rise generally throughout the state, most growth will take place on the Wasatch Front, where BLM administers little land. Highways, utility rights-of-way, land transfers to the state, and withdrawals by other federal agencies will place heaviest demands on the public lands in this period.

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